

=> file reg

FILE 'REGISTRY' ENTERED AT 11:19:36 ON 15 JUN 2006
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=> d his

FILE 'HCAPLUS' ENTERED AT 10:54:53 ON 15 JUN 2006
L1 8691 S MAEKAWA ?/AU
L2 5993 S MANABE ?/AU
L3 23 S L1 AND L2
L4 1796 S MAEKAWA T?/AU
L5 782 S MANABE K?/AU
L6 12 S L4 AND L5
SEL L6 1 RN

FILE 'REGISTRY' ENTERED AT 10:56:35 ON 15 JUN 2006
L7 5 S E1-E5

FILE 'HCAPLUS' ENTERED AT 10:57:28 ON 15 JUN 2006
SEL L6 1-12 RN

FILE 'REGISTRY' ENTERED AT 10:57:44 ON 15 JUN 2006
L8 28 S E6-E33
L9 2 S L8 AND 2/ELC.SUB
E C30H18/MF
L10 297 S E3

FILE 'LREGISTRY' ENTERED AT 10:59:08 ON 15 JUN 2006
L11 1876 S 4 46.150.18/RID
L12 99 S 7 46.150.18/RID

FILE 'REGISTRY' ENTERED AT 11:00:30 ON 15 JUN 2006
L13 13 S L10 AND L11
L14 4 S L13 AND TRIS
SEL L14 1-3 RN
L15 3 S E1-E3
SEL L15 1-3 RN
EDIT E4-E6 /BI /CRN
L16 26 S E4-E6

FILE 'CAOLD' ENTERED AT 11:05:18 ON 15 JUN 2006
L17 0 S L15 OR L16

FILE 'ZCA' ENTERED AT 11:05:21 ON 15 JUN 2006
L18 58 S L15 OR L16

7- 11
1- 3

FILE 'REGISTRY' ENTERED AT 11:06:03 ON 15 JUN 2006

E C48H30/MF

L19 66 S E3
L20 7 S L19 AND L12
SEL L20 1,4 RN
L21 2 S E1-E2
SEL L21 1-2 RN
EDIT E3-E4 /BI /CRN
L22 0 S E3-E4

FILE 'CAOLD' ENTERED AT 11:15:06 ON 15 JUN 2006

L23 0 S L21

FILE 'ZCA' ENTERED AT 11:15:11 ON 15 JUN 2006

L24 9 S L21
L25 50 S L18 AND 1840-2003/PRY,PY
L26 7 S L24 AND 1840-2003/PRY,PY

=> file zca

FILE 'ZCA' ENTERED AT 11:19:47 ON 15 JUN 2006

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=> d l25 1-50 cbib abs hitstr hitrn

L25 ANSWER 1 OF 50 ZCA COPYRIGHT 2006 ACS on STN

142:67055 Laminates for fabrication of semiconductor multilayer circuit devices by dual Damascene process. Yokozuka, Shunsuke (Asahi Glass Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004356582 A2 20041216, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-155579 20030530.

AB The title laminates comprise (1) .gtoreq.1 layers including a hard mask, an etching stopper, a CMP stopper, and a diffusion barrier and (2) .gtoreq.1 layers including interlayer insulator films, wherein .gtoreq.1 of the layers is provided by hardening of a polyarom. prepolymer having hydrolytic silyl groups. The polyarom. prepolymer may contain ether-forming O, ethynylene group, or hydrolyzing silyl ethylene group provided in between mono- or multivalent arom. nuclei. The hardened polyarom. prepolymer gives the laminates increased interlayer adhesion.

IT **204521-32-4DP**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene

copolymer, hydrolyzed triethoxysilylated **204521-32-4P**,
 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-
 1,3,5-tris(phenylethynyl)benzene copolymer
 (laminates contg., for increased adhesion; hardened polyarom.
 prepolymer-contg. laminates for fabrication of semiconductor
 multilayer circuit devices by dual Damascene process)

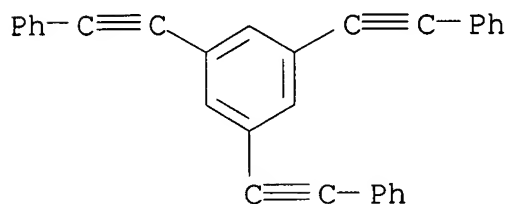
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-
 triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA
 INDEX NAME)

CM 1

CRN 118688-56-5

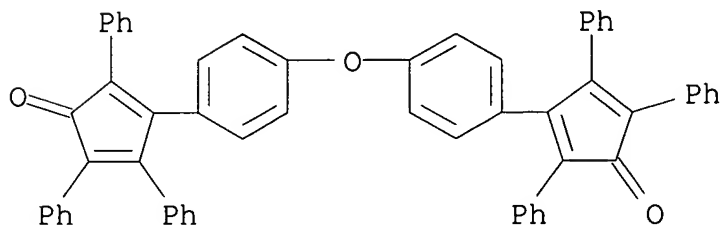
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3



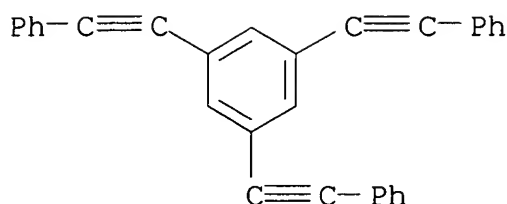
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-
 triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA
 INDEX NAME)

CM 1

CRN 118688-56-5

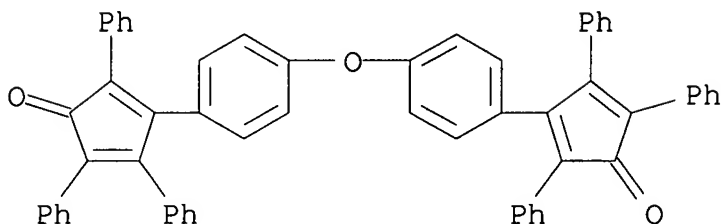
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3



IT **204521-32-4DP**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer, hydrolyzed triethoxysilylated **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer (laminates contg., for increased adhesion; hardened polyarom. prepolymer-contg. laminates for fabrication of semiconductor multilayer circuit devices by dual Damascene process)

L25 ANSWER 2 OF 50 ZCA COPYRIGHT 2006 ACS on STN

141:380882 Method of filling high aspect ratio, small dimension gaps during microelectronics manufacture and formulations useful therein. Foster, Kenneth L.; Godschalx, James P.; Simmonds, Michael G. (Dow Global Technologies Inc., USA). PCT Int. Appl. WO 2004095569 A1 20041104, 17 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2004-US11534 20040415. PRIORITY: US 2003-PV463709 20030417.

AB Title method comprising (a) providing a substrate having at least one recessed feature characterized by a width of less than about 0.3 .mu.m and an aspect ratio of 5 or higher, (b) coating onto the substrate a compn. comprising (i) a curable polymeric material, (ii) a thermally deactivatable gap-filling aid, and (iii) at least one solvent, (c) drying the coated substrate to remove the solvent, leaving a compn. of crosslinkable polymeric material and gap-filling aid substantially filling the recessed feature, and (d) heating the coated substrate to cure the polymeric material and to de-activate the gap-filling aid, wherein the cured material has a glass transition temp. of no less than 300.degree. and, preferably, a thermal stability temp. of at least 300.degree.. Thus, a microelectronic filling compn. was prepd. by admixing 3,3'-(oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer 24.5 g, and 1,3,5-tris(phenylethynyl)benzene as a reactive coating aid 8 g in .gamma.-butyrolactone and mesitylene 34 g.

IT **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer
(method of filling formulations with high aspect ratio and small dimension gaps for microelectronics)

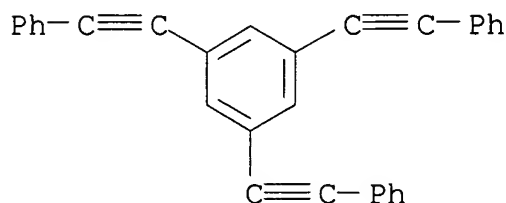
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

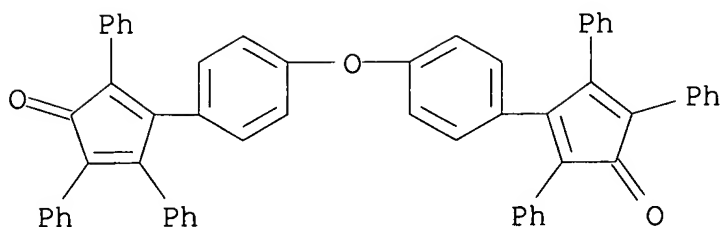
CMF C30 H18



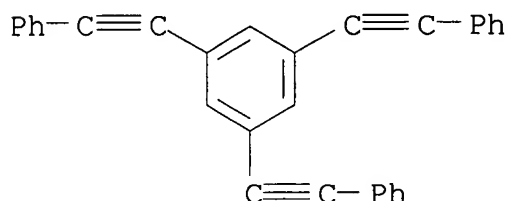
CM 2

CRN 13092-45-0

CMF C58 H38 O3



IT **118688-56-5**, 1,3,5-Tris(phenylethynyl)benzene
 (reactive coating aid; method of filling formulations with high
 aspect ratio and small dimension gaps for microelectronics)
 RN 118688-56-5 ZCA
 CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-
 triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene
 copolymer
 (method of filling formulations with high aspect ratio and small
 dimension gaps for microelectronics)
 IT **118688-56-5**, 1,3,5-Tris(phenylethynyl)benzene
 (reactive coating aid; method of filling formulations with high
 aspect ratio and small dimension gaps for microelectronics)

L25 ANSWER 3 OF 50 ZCA COPYRIGHT 2006 ACS on STN

141:332981 Porous dielectric composition of matter, and manufacture of
 porous material. Connor, Eric; Godschalx, James P.; Hawker, Craig
 J.; Hedrick, James L.; Lee, Victor Yee-Way; Magbitang, Teddie P.;
 Miller, Robert D.; Niu, Q. Jason; Volksen, Willi (International
 Business Machines Corporation, USA; Dow Global Technologies Inc.).
 U.S. Pat. Appl. Publ. US 2004198850 A1 20041007, 33 pp.,
 Cont.-in-part of U.S. Ser. No. 334,438, abandoned. (English).
 CODEN: USXXCO. APPLICATION: US 2004-827694 20040419. PRIORITY: US
 2002-334438 20021231.

AB A low-K org. dielec. material having stable nano-sized porous
 features is provided. The porous low-K org. dielec. material is
 made from a compn. having a vitrification temp. (Tv) which includes
 a b-staged thermosetting resin having a vitrification temp.
 (Tv-resin), a pore generating material, and a reactive additive.

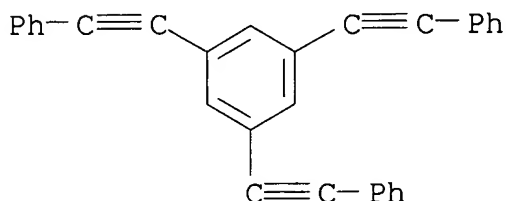
The reactive additive lowers T_v below T_v -resin.

IT **118688-56-5**

(reactive additive; thermoset polyarylene contg. porogen and a reactive additive for porous dielec. film having low dielec. const.)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)

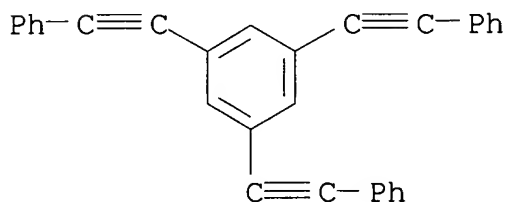


IT **118688-56-5D**, reaction products with Diels-Alder reaction products

(thermoset polyarylene contg. porogen and a reactive additive for porous dielec. film having low dielec. const.)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**

(reactive additive; thermoset polyarylene contg. porogen and a reactive additive for porous dielec. film having low dielec. const.)

IT **118688-56-5D**, reaction products with Diels-Alder reaction products

(thermoset polyarylene contg. porogen and a reactive additive for porous dielec. film having low dielec. const.)

L25 ANSWER 4 OF 50 ZCA COPYRIGHT 2006 ACS on STN

141:244354 Silicon-containing aromatic polymers with low dielectric constant and good chemical, heat and plasma resistance and their use in electric insulation films. Yokozuka, Shunsuke (Asahi Glass Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004250585 A2 20040909, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-42572 20030220.

AB The polymers are obtained from the hydrosilylation reaction products

of an arom. compd. bearing .gtoreq.3 ethynylene groups with a compd. bearing .gtoreq.2 SiH groups where the unreacted ethynylene group(s) is subjected to crosslinking. The polymers or their crosslinked products are used with a silica for forming composite materials which are useful for insulation films. Thus, mixing 1,3,5-tris(phenylethynyl)benzene 5.67 with 1,1,3,3-tetramethyldisiloxane 1.34 and PhMe 54 g, adding 10 .mu.L a 3% PhMe soln. of Pt-divinyldisiloxane complex to the resulting soln. and heating at 60.degree. with stirring gave a polymer with mol. wt. 3000, dielec. const. 2.7 and modulus 5 GPa.

IT **749218-65-3DP**, 1,1,3,3-Tetramethyldisiloxane-1,3,5-tris(phenylethynyl)benzene copolymer, reaction product with triethoxysilane, crosslinked with alkoxysilanes **749218-65-3P**, 1,1,3,3-Tetramethyldisiloxane-1,3,5-tris(phenylethynyl)benzene copolymer **749230-57-7P**, Bis(dimethylsilyl)benzene-1,3,5-tris(phenylethynyl)benzene copolymer **749230-59-9P**, Bis(diethoxysilyl)benzene-1,3,5-tris(phenylethynyl)benzene copolymer (manuf. and use of silicon-contg. arom. polymers with low dielec. const. and good chem., heat and plasma resistance)

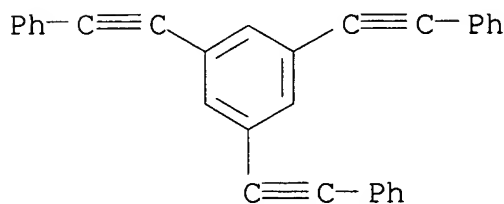
RN 749218-65-3 ZCA

CN Disiloxane, 1,1,3,3-tetramethyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

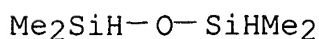
CMF C30 H18



CM 2

CRN 3277-26-7

CMF C4 H14 O Si2



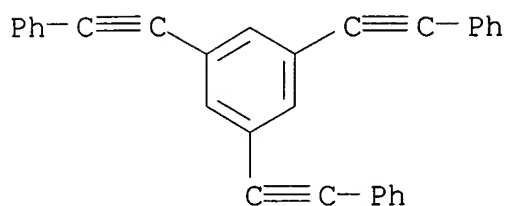
RN 749218-65-3 ZCA

CN Disiloxane, 1,1,3,3-tetramethyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

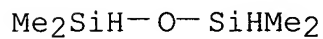
CMF C30 H18



CM 2

CRN 3277-26-7

CMF C4 H14 O Si2



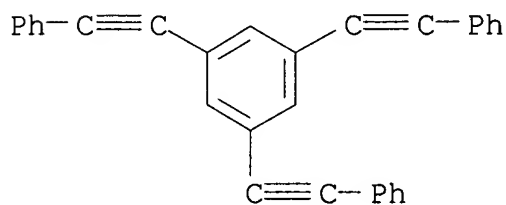
RN 749230-57-7 ZCA

CN Silane, phenylenebis[dimethyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

CMF C30 H18

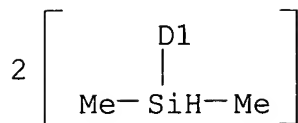
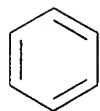


CM 2

CRN 25898-36-6

CMF C10 H18 Si2

CCI IDS



RN 749230-59-9 ZCA

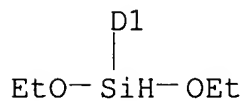
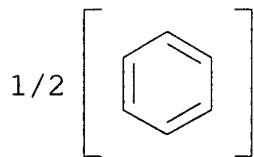
CN Silane, phenylenebis[diethoxy-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 749230-58-8

CMF C14 H26 O4 Si2

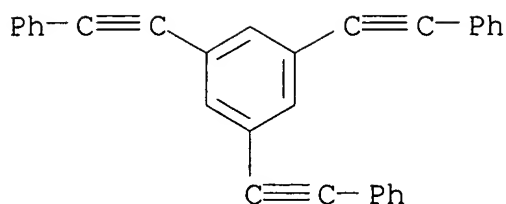
CCI IDS



CM 2

CRN 118688-56-5

CMF C30 H18



IT **749218-65-3DP**, 1,1,3,3-Tetramethyldisiloxane-1,3,5-tris(phenylethynyl)benzene copolymer, reaction product with triethoxysilane, crosslinked with alkoxy silanes **749218-65-3P**, 1,1,3,3-Tetramethyldisiloxane-1,3,5-tris(phenylethynyl)benzene copolymer **749230-57-7P**, Bis(dimethylsilyl)benzene-1,3,5-tris(phenylethynyl)benzene copolymer **749230-59-9P**, Bis(diethoxysilyl)benzene-1,3,5-tris(phenylethynyl)benzene copolymer (manuf. and use of silicon-contg. arom. polymers with low dielec. const. and good chem., heat and plasma resistance)

L25 ANSWER 5 OF 50 ZCA COPYRIGHT 2006 ACS on STN

141:226353 Method for synthesis of crosslinked or crosslinkable polyarylenes having cyclic functional groups. Godschalx, James P.; Pechacek, James P.; Arndt, Kim E. (Dow Global Technologies Inc., USA). PCT Int. Appl. WO 2004073824 A2 20040902, 25 pp. DESIGNATED STATES: W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, ML, MR, NE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2004-US4986 20040219. PRIORITY: US 2003-PV449568 20030220.

AB The method comprises: (1) providing a reaction mixt. comprising (a) a first monomer comprising at least two cyclic functional groups, (b) a second monomer comprising at least two dienophile functional groups, and (2) heating the reaction mixt. to form a polymd. or partially polymd. polyarylene material, wherein at least one of the first or second monomers must comprise at least three functional groups, and the cyclic groups in the first monomer contain a leaving group selected from O, S, SO₂, N:N, or O(CO).

IT **746633-72-7P 746633-73-8P 746633-74-9P 746633-75-0P 746633-76-1P**

(synthesis of crosslinked or crosslinkable polyarylenes having cyclic functional groups)

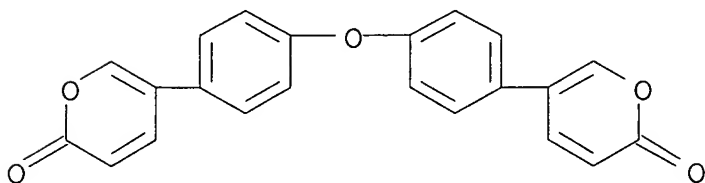
RN 746633-72-7 ZCA

CN 2H-Pyran-2-one, 5,5'-(oxydi-4,1-phenylene)bis-, polymer with
1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 746633-70-5

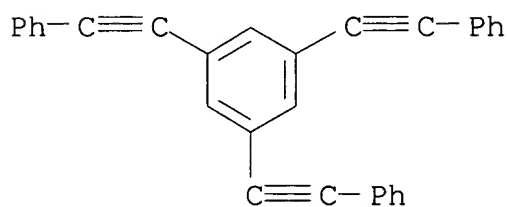
CMF C22 H14 O5



CM 2

CRN 118688-56-5

CMF C30 H18



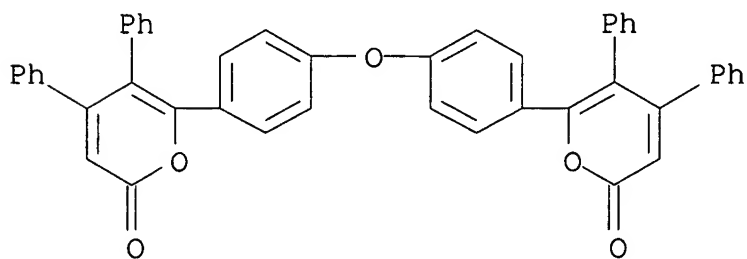
RN 746633-73-8 ZCA

CN 2H-Pyran-2-one, 6,6'-(oxydi-4,1-phenylene)bis[4,5-diphenyl-, polymer
with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 746633-71-6

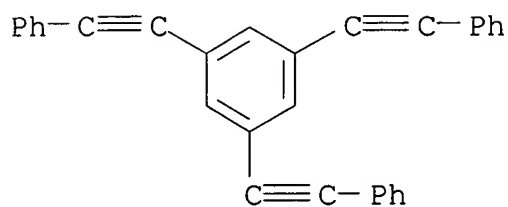
CMF C46 H30 O5



CM 2

CRN 118688-56-5

CMF C30 H18



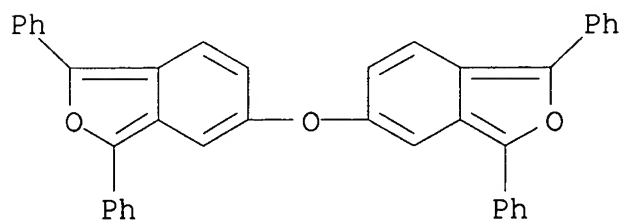
RN 746633-74-9 ZCA

CN Isobenzofuran, 5,5'-oxybis[1,3-diphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 194713-38-7

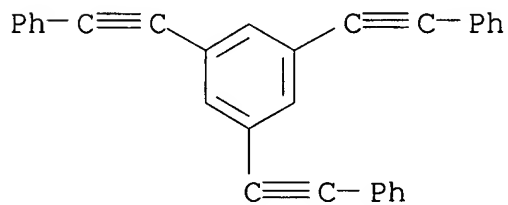
CMF C40 H26 O3



CM 2

CRN 118688-56-5

CMF C30 H18



RN 746633-75-0 ZCA

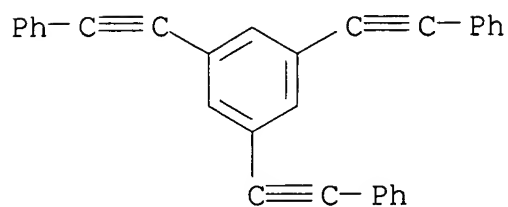
CN 2,2'-Bithiophene, polymer with 1,3,5-tris(phenylethynyl)benzene

(9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

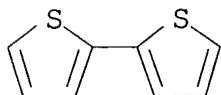
CMF C30 H18



CM 2

CRN 492-97-7

CMF C8 H6 S2



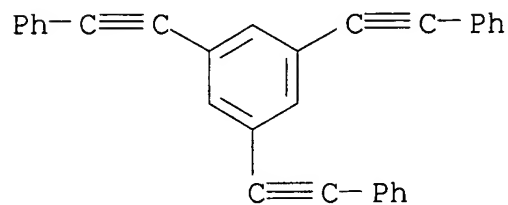
RN 746633-76-1 ZCA

CN 3,3'-Bithiophene, polymer with 1,3,5-tris(phenylethynyl)benzene
(9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

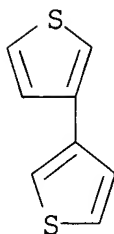
CMF C30 H18



CM 2

CRN 3172-56-3

CMF C8 H6 S2



IT **746633-72-7P 746633-73-8P 746633-74-9P**
746633-75-0P 746633-76-1P

(synthesis of crosslinked or crosslinkable polyarylenes having cyclic functional groups)

L25 ANSWER 6 OF 50 ZCA COPYRIGHT 2006 ACS on STN

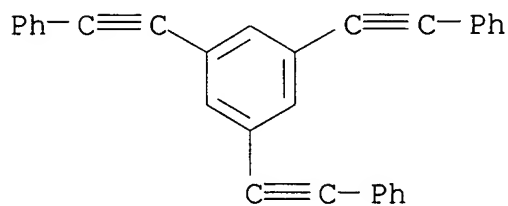
141:164912 Optical disks capable of recording and reading with blue laser, and arylacetylenes used for them. Ishida, Tsutomu; Shiozaki, Hiroyoshi; Ogiso, Akira (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004224710 A2 20040812, 51 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-11832 20030121.

AB The disks have .gtoreq.1 recording layers contg. .gtoreq.1 arylacetylenes. The arylacetylenes are Ar[(C.tplbond.C)kRm]n (Ar = arom. group; .gtoreq.2 arom. group bonded via .gtoreq.1 linkages; Rm = H, halo, nitro, cyano, etc.; l = 1, 2; n .gtoreq.3; m = 1 - n). The disks show good light and moisture heat resistance.

IT **118688-56-5**
 (arylacetylenes for optical disks capable of recording and reading with blue laser)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**
 (arylacetylenes for optical disks capable of recording and reading with blue laser)

L25 ANSWER 7 OF 50 ZCA COPYRIGHT 2006 ACS on STN

141:72443 Integrated circuit articles containing polyarylene polymers with reduced thermal expansion. Hedrick, Jeffrey C.; Sankarapandian, Muthumanickam; Tyberg, Christy S.; Godschalx, James

P.; Niu, Qingshan J.; Silvis, Harry C. (International Business Machines Corp., USA). U.S. Pat. Appl. Publ. US 2004126586 A1 20040701, 11 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-334413 20021231.

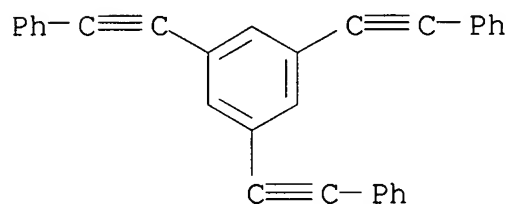
AB The crosslinked polyarylene material having coeff. of thermal expansion (detd. by thermal mech. anal.) <115 ppm/degree. over a temp. range of 350-425.degree., is prepd. by reacting 3,3'-(oxydi-1,4-phenylene) bis(2,4,5-triphenylcyclopentadienone) and 1,3,5-tris (phenylethynyl)benzene with a stoichiometric molar ratio of the two monomers 0.70/1-0.99/1, resp.; and curing .gtoreq.405.degree. for .gtoreq.1 h. An integrated circuit article comprises an active substrate including .gtoreq.1 transistors, an elec. interconnect structure contg. a pattern of metal lines, and the polyarylene material.

IT **118688-56-5P**

(prepn. of polyarylene polymers with reduced thermal expansion for integrated circuit articles)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **204521-32-4P**

(prepn. of polyarylene polymers with reduced thermal expansion for integrated circuit articles)

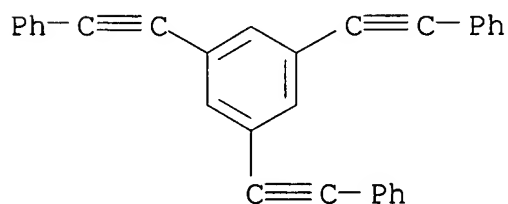
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

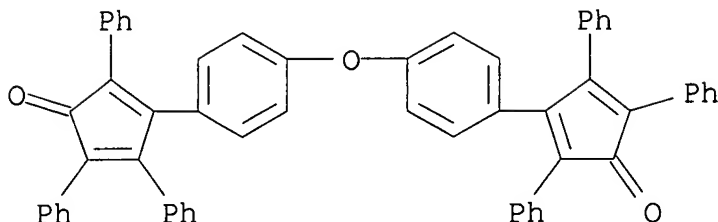
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3

IT **118688-56-5P**

(prepn. of polyarylene polymers with reduced thermal expansion for integrated circuit articles)

IT **204521-32-4P**

(prepn. of polyarylene polymers with reduced thermal expansion for integrated circuit articles)

L25 ANSWER 8 OF 50 ZCA COPYRIGHT 2006 ACS on STN

140:145878 Fulvenes from enediynes: regioselective electrophilic domino and tandem cyclizations of enynes and oligoynes. Schreiner, Peter R.; Prall, Matthias; Lutz, Volker (Institut fuer Organische Chemie, Justus-Liebig-Universitaet, Giessen, 35592, Germany). Angewandte Chemie, International Edition, 42(46), 5757-5760 (English) **2003**. CODEN: ACIEF5. ISSN: 1433-7851. OTHER SOURCES: CASREACT 140:145878. Publisher: Wiley-VCH Verlag GmbH & Co. KGaA.

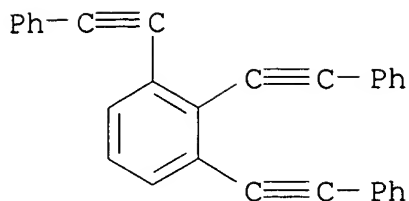
AB Complementary products: the electrophilic cyclizations of ortho-benzooligoynes upon bromination give benzopentafulvenes with orthogonal, peripheral Ph groups. In contrast, the thermal cyclizations of the same starting materials give naphthalene derivs. This strategy was used for the synthesis of annellated benzopentafulvenes in domino reactions. Crystal structures of some of the products were also reported.

IT **543688-89-7**

(prepn. and crystal structures of fulvenes from regioselective electrophilic domino and tandem cyclizations of enynes and oligoynes)

RN 543688-89-7 ZCA

CN Benzene, 1,2,3-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **543688-89-7**

(prepn. and crystal structures of fulvenes from regioselective electrophilic domino and tandem cyclizations of enynes and oligoynes)

L25 ANSWER 9 OF 50 ZCA COPYRIGHT 2006 ACS on STN

139:396806 Porous nanocomposite thin films having low dielectric constance and the formation method therefor. Yokozuka, Shunsuke; Tsuruoka, Kaoru (Asahi Glass Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003342411 A2 **20031203**, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-155795 20020529.

AB The films also have good mech. properties and plasma and chem. resistance, useful for electronic devices, and contain silica (A) and a heat-resistant org. polymer (B). Thus, polymg. 18.9 g perfluoro(1,3,5-triphenylbenzene) with 8.32 g 4-phenylethynylnonafluorobiphenyl and 3.78 g 1,3,5-trihydroxybenzene in ACNME2 gave a heat-resistant polymer, 5.0 g of which was reacted with 5.1 g a silica precursor (from triethoxysilane and methyltrimethoxysilane, prepn. given) to give a reacted mixt., 100 parts of which was then mixed with 12.6 parts a polymer of .epsilon.-caprolactone homopolymer diester with ethylene glycol (prepn. given) to give a title compn. with claimed properties.

IT **204521-32-4DP**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer, reaction product with H-bearing silsesquioxanes (preps. of heat-resistant fluoropolymers for porous nanocomposite thin films)

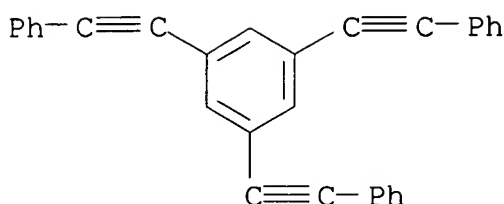
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

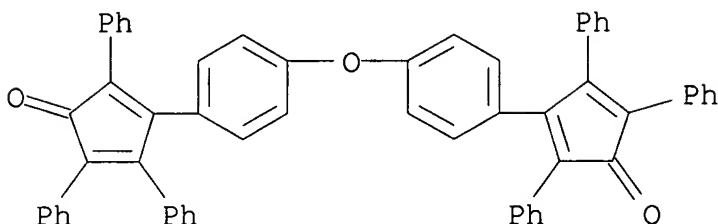
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3



IT **204521-32-4DP**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer, reaction product with H-bearing silsesquioxanes (preps. of heat-resistant fluoropolymers for porous nanocomposite thin films)

L25 ANSWER 10 OF 50 ZCA COPYRIGHT 2006 ACS on STN

139:150816 Process for planarizing a microelectronic substrate with crosslinked polymer dielectric layer. Foster, Kenneth L.; Radler, Michael J. (Dow Global Technologies Inc., USA). PCT Int. Appl. WO 2003064495 A2 **20030807**, 22 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US35756 20021106. PRIORITY: US 2001-PV338054 20011107.

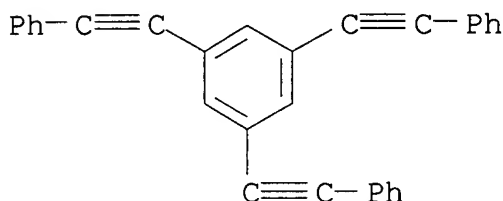
AB Title process comprises the steps of (I) heating such a substrate coated with a layer comprising an uncured cross-linkable polymer and a glass transition suppression modifier to a temp. greater than the glass transition temp. of the layer, the temp. being less than the

curing temp. of the uncured cross-linkable polymer to form a substrate coated with a heat flowed layer; and (II) heating the substrate coated with the heat flowed layer to a curing temp. of the uncured cross-linkable polymer of the heated layer to cure the uncured cross-linkable polymer to form a planarized substrate wherein the percent planarization at 100 .mu.m is greater than fifty percent.

IT **161127-06-6P**, 1,3,5-Tris(phenylethynyl)benzene homopolymer
(process for planarizing microelectronic substrate with crosslinked polymer dielec. layer)
RN 161127-06-6 ZCA
CN Benzene, 1,3,5-tris(phenylethynyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5
CMF C30 H18



IT **161127-06-6P**, 1,3,5-Tris(phenylethynyl)benzene homopolymer
(process for planarizing microelectronic substrate with crosslinked polymer dielec. layer)

L25 ANSWER 11 OF 50 ZCA COPYRIGHT 2006 ACS on STN

139:118392 Electrically insulating coating varnishes, and electric insulator films and semiconductor devices using them. Ishikawa, Tadahiro; Saito, Hidenori; Murayama, Kazumoto (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003206441 A2 **20030722**, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-280028 20020925. PRIORITY: JP 2001-294864 20010926.

AB The coating varnishes contain (A) copolymers prepd. by reaction of polyamides having repeating units [NHX(OR1)(OR2)NHCOR1CO]m[NHX(OR3)(OR4)NHCOR2CO]n [m > 0; n .gtoreq. 0; 2 .ltoreq. m + n .ltoreq. 1000; 0.05 .ltoreq. m/(m + n) .ltoreq. 1; R1-R4 = H, monovalent org. group; X = arom. tetravalent group; Y1 = acetylenic group-contg. divalent group, biphenylenediyl; Y2 = divalent group] with reactive oligomers having substituents reactive towards carboxyl, amino, or hydroxy groups of the polyamides, (B) acetylenes, and (C) org. solvents. Thus, 2.94 mmol 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane was polymd. with 3.0 mmol

2-phenylethynylterephthaloyl chloride in N-methyl-2-pyrrolidone in the presence of Et₃N and the reaction product was condensed with 0.12 mmol 4-aminobenzoate ester-terminated styrene oligomer in .gamma.-butyrolactone to give a copolymer having Mw 20,000 and Mw/Mn 2.22. A varnish contg. the copolymer 1.0, 4,4'-bis(phenylethynyl)biphenyl (prepn. given) 0.2, and cyclohexanone 8.8 g was applied on a Si wafer and heated at 100.degree. for 30 min, at 200.degree. for 30 min, and at 400.degree. for 1 h to form a 1.23-.mu.m film showing dielec. const. 2.2, 5% wt.-loss temp. 521.degree., Tg >450.degree., elastic modulus 5 GPa, and .ltoreq.10-nm fine pores.

IT **562870-51-3P**

(benzoxazole ring-contg.; coating varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)

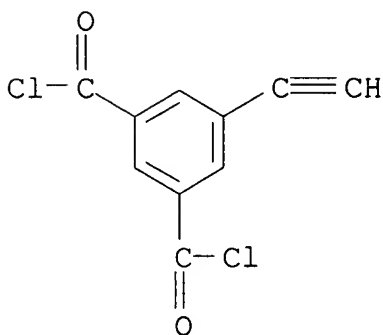
RN 562870-51-3 ZCA

CN 1,3-Benzenedicarbonyl dichloride, 5-ethynyl-, polymer with .alpha.-(2-aminopropyl)-.omega.-(2-aminopropoxy)poly[oxy(methyl-1,2-ethanediyl)], 4,4'-(9H-fluoren-9-ylidene)bis[2-aminophenol] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 393543-05-0

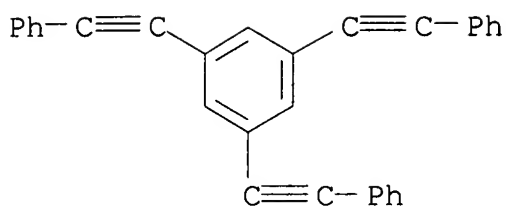
CMF C10 H4 Cl2 O2



CM 2

CRN 118688-56-5

CMF C30 H18

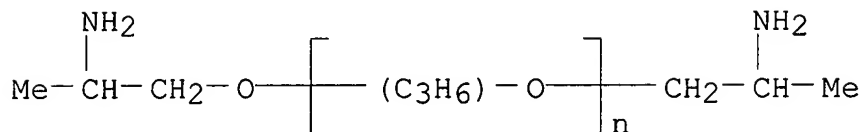


CM 3

CRN 26403-64-5

CMF (C3 H6 O)_n C6 H16 N2 O

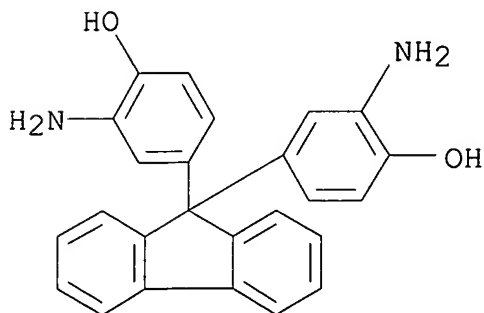
CCI IDS, PMS



CM 4

CRN 20638-07-7

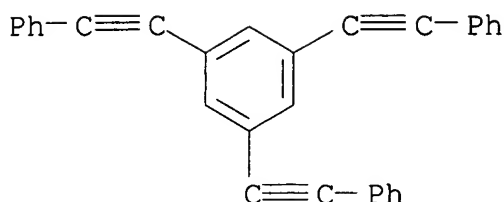
CMF C25 H20 N2 O2



IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
 (coating varnishes contg. OH- and acetylenic group-contg.
 polyamides and acetylenes for nanoporous dielec. crosslinked
 polybenzoxazole films and semiconductor devices)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)

IT **562870-51-3P**

(benzoxazole ring-contg.; coating varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)

IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene

(coating varnishes contg. OH- and acetylenic group-contg. polyamides and acetylenes for nanoporous dielec. crosslinked polybenzoxazole films and semiconductor devices)

L25 ANSWER 12 OF 50 ZCA COPYRIGHT 2006 ACS on STN

139:38629 Bulk synthesis of carbon nanotubes from metallic and ethynyl compounds. Keller, Teddy M.; Qadri, Syed B. (USA). U.S. Pat. Appl. Publ. US 2003108477 A1 **20030612**, 30 pp., Cont.-in-part of U.S. Ser. No. 6,385. (English). CODEN: USXXCO. APPLICATION: US 2002-216470 20020726. PRIORITY: US 2001-2001/6385 20011210; US 2001-2001/6226 20011210.

AB Carbon nanotubes are manufd. by heating a solid or liq. (at room temp.) precursor compn. consisting of at least one metallic compd. and at least one org. compd., esp. an ethynyl compd., and/or a metal-ethynyl complex under nitrogen to a temp. of .gtoreq. 500.degree.C. The metal in the metallic compd. can be iron, cobalt, nickel, ruthenium, osmium, molybdenum, tungsten, yttrium, lutetium, boron, copper, manganese, silicon, chromium, zinc, palladium, silver, platinum, tin, tellurium, bismuth, germanium, antimony, aluminum, indium, sulfur, selenium, cadmium, gadolinium, hafnium, magnesium, titanium, lanthanum, cerium, praseodymium, neodymium, terbium, dysprosium, holmium, or erbium. The metallic compd. can be a metallocenyl compd., a metal salt, a metal-ethynyl complex, or their mixts. The metallocenyl compd. can be a ferrocenyl compd., a metallocenylethynyl compd., 1,4-bis(ferrocenyl)butadiyne, metallocenylethynyl-arom. compd., 1,3-bis(ferrocenylethynyl)benzene, 1,4-bis(ferrocenylethynyl)benzene, 1-(ferrocenylethynyl)-3-(phenylethynyl)benzene, 1-(ferrocenylethynyl)-4-(phenylethynyl)-benzene, 1,3,5-tris(ferrocenylethynyl)benzene, a metallocenylethynylphosphine metal salt, bis(ferrocenylethynyl)-bis(triphenylphosphine)nickel, bis(ferrocenylethynyl)-bis(triethylphosphine)palladium, bis(ferrocenylethynyl)-bis(triethylphosphine)platinum, or their mixts. The metal salt can

be a metal carbonyl salt, nonacarbonyl diiron, octacarbonyl dicobalt, dodecacarbonyl triruthenium, hexacarbonyl tungsten, a phosphine metal salt, bis(triphenylphosphine)nickel, bis(triethylphosphine)palladium, bis(triethylphosphine)platinum, dicarbonylbis(triphenylphosphine)nickel, palladium(II) acetyl acetonate, manganese tris(acetylacetonate), cyclopentadienyl tungsten tricarbonyl dimer, or their mixts. The metal-ethynyl complex can be a metal carbonylethynyl complex, hexacarbonyl dicobalt complex, hexacarbonyl diiron complex, or nonacarbonyl triruthenium complex of 1,2,4,5-tetrakis(phenylethynyl)benzene, a metal carbonylmetallocenylethynyl contg. complex, hexacarbonyl dicobalt complex of 1,4-bis(ferrocenyl)butadiyne, hexacarbonyl dicobalt complex of 1-(ferrocenylethynyl)-4-(phenylethynyl)benzene, hexacarbonyl dicobalt complex of 1-(ferrocenylethynyl)-3-(phenylethynyl)benzene, or their mixts. The ethynyl compd. can be an ethynylarom. compd., 1,2,3-tris(phenylethynyl)benzene, 1,2,4-tris(phenylethynyl)benzene, 1,3,5-tris(phenylethynyl)benzene, 1,2,3,4-tetrakis(phenylethynyl)benzene, 1,2,3,5-tetrakis(phenylethynyl)benzene, 1,2,4,5-tetrakis(phenylethynyl)benzene, 1,2,3,4,5-pentakis(phenylethynyl)benzene, 1,2,3,4,5,6-hexakis(phenylethynyl)benzene, or their mixts. At least one of the compds. is an arom. compd. The metal content of the precursor compn. is .ltoreq. 1 wt.%. In an alternative method the precursor compn. consists of a polymer and a metallic component, wherein the polymer has cross-linked ethynyl groups and the metallic component is bonded to or combined with the polymer. The metallic component can be a metallocenyl group, a metal-ethynyl complex group, a metal salt, metal nanoparticles, or elemental metal. Rigid carbon nanotube compns. contg. carbon nanotubes and metal nanoparticles are produced. The carbon nanotubes can be used to manuf. magnetic semiconductors, superconductors, fibers, shaped articles, powders, films, drug delivery systems, lubricants, microelectronic devices, electrodes, ferrofluids, sensors, or photovoltaic devices.

IT **118688-56-5**, Benzene, 1,3,5-tris(phenylethynyl)

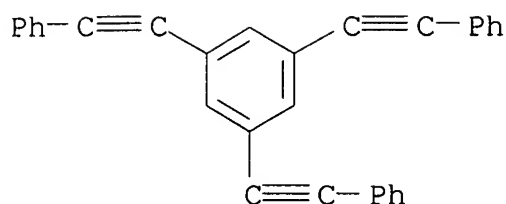
151041-82-6, Benzene, 1,2,4-tris(phenylethynyl)

543688-89-7

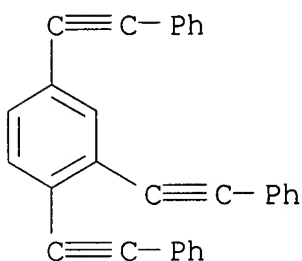
(bulk synthesis of carbon nanotubes from metallic and ethynyl compds.)

RN 118688-56-5 ZCA

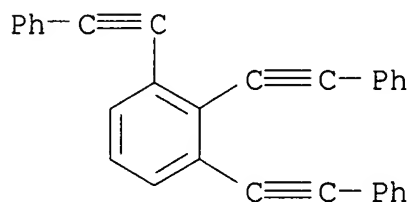
CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA
 CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 543688-89-7 ZCA
 CN Benzene, 1,2,3-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**, Benzene, 1,3,5-tris(phenylethynyl)
151041-82-6, Benzene, 1,2,4-tris(phenylethynyl)
543688-89-7
 (bulk synthesis of carbon nanotubes from metallic and ethynyl
 compds.)

L25 ANSWER 13 OF 50 ZCA COPYRIGHT 2006 ACS on STN
 139:37355 Metal nanoparticle thermoset and carbon compositions from
 metallocene-aromatic acetylene compound mixtures. Keller, Teddy M.;
 Perrin, Joseph; Qadri, Syed B. (The United States of America as
 Represented by The Secretary of The Navy, USA). U.S. Pat. Appl.
 Publ. US 2003109619 A1 **20030612**, 13 pp. (English).
 CODEN: USXXCO. APPLICATION: US 2001-6385 20011210.
 AB The present invention provides for a compn. comprising: a compn.
 formed by heating to a temp. of from about 300.degree. and above a

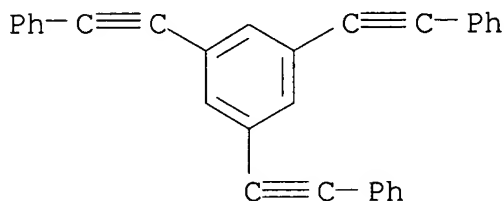
mixt. of: an acetylenic metallocene compn. and an arom. acetylene contg. compd.; wherein the arom.-acetylene contg. compn. is 1,2,4,5-tetrakis(phenylethynyl)benzene, 1,2,4-tris(phenylethynyl)benzene or 1,3,5-tris(phenylethynyl)benzene; and wherein the acetylenic metallocene compn. and the arom. acetylene compn. have molar mix proportions of 1-99% acetylenic metallocene compn. and 99-1% arom. acetylene compn. An iron nanoparticle/carbon compn. was prepd. from a 75/25 M mix of 1,4-bis(ferrocenyl)butadiyne and 1,2,4,5-tetrakis(phenylethynyl)benzene.

IT **118688-56-5**, 1,3,5-Tris(phenylethynyl)benzene
151041-82-6

(metal nanoparticle thermoset and carbon compns. from metallocene-arom. acetylene compd. mixts.)

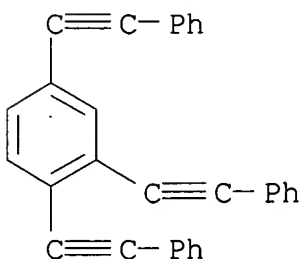
RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**, 1,3,5-Tris(phenylethynyl)benzene
151041-82-6

(metal nanoparticle thermoset and carbon compns. from metallocene-arom. acetylene compd. mixts.)

L25 ANSWER 14 OF 50 ZCA COPYRIGHT 2006 ACS on STN

138:310943 Energy transfer and optical excitations in dendrimers. Reineker, P.; Engelmann, A.; Yudson, V. I. (Abteilung Theoretische Physik, Universitat Ulm, Ulm, 89069, Germany). Proceedings of the International School of Physics "Enrico Fermi", 149th(Organic Nanostructures: Science and Applications), 507-519 (English)

2002. CODEN: PIPFA7. ISSN: 0074-784X. Publisher: IOS Press.

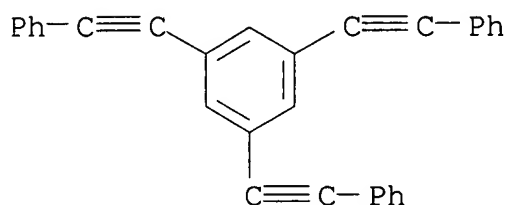
AB The optical absorption spectra of compact dendrimers is dominated by peripheric mols. and the energetically lowest absorption peak is red-shifted with increasing dendrimer size. We identified the states responsible for this lowest absorption peak and explained the red shift in terms of the delocalization energy over the whole dendrimer.

IT **118688-56-5**

(energy transfer and optical absorption spectra in dendrimers)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**

(energy transfer and optical absorption spectra in dendrimers)

L25 ANSWER 15 OF 50 ZCA COPYRIGHT 2006 ACS on STN

138:187608 Multifold and sequential cross-coupling reactions with indium organometallics. Pena, Miguel A.; Perez, Ignacio; Sestelo, Jose Perez; Sarandeses, Luis A. (Departamento de Quimica Fundamental, Universidade da Coruna, A Coruna, E-15071, Spain). Chemical Communications (Cambridge, United Kingdom) (19), 2246-2247 (English)

2002. CODEN: CHCOFS. ISSN: 1359-7345. OTHER SOURCES:

CASREACT 138:187608. Publisher: Royal Society of Chemistry.

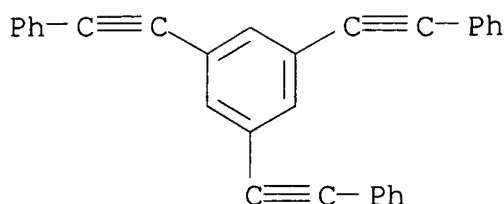
AB Multifold and sequential palladium-catalyzed cross-coupling reactions can be performed between triorganoindium compds. and oligohaloarenes using only a small excess of the organometallic reagent, low catalyst charge loading, and short reaction times.

IT **118688-56-5P**

(multifold and sequential palladium-catalyzed cross-coupling reactions of triorganoindium compds. and oligohaloarenes)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**

(multifold and sequential palladium-catalyzed cross-coupling reactions of triorganoindium compds. and oligohaloarenes)

L25 ANSWER 16 OF 50 ZCA COPYRIGHT 2006 ACS on STN

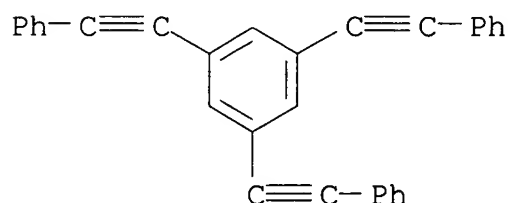
138:114834 Electroluminescent element. Igarashi, Tatsuya; Qiu, Xuepeng (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003027048 A2 **20030129**, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-211270 20010711.

AB The invention refers to an electroluminescent device comprising the compd. Ar(Ar11)(Ar12)(Ar13)(Ar14)(Ar15)[(R1)n1] [Ar11,12,13,14,15 = aryl or heteroaryl; Ar = aryl; R1 = substituent; n1 > 1] and utilizing luminescence from the triplet excited state.

IT **118688-56-5**, 1,3,5-Tris(phenylethynyl) benzene
(phosphorescent electroluminescent element)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**, 1,3,5-Tris(phenylethynyl) benzene
(phosphorescent electroluminescent element)

L25 ANSWER 17 OF 50 ZCA COPYRIGHT 2006 ACS on STN

138:40826 Fire-resistant halogen-free epoxy-based sealing compositions suitable for semiconductor device. Nonaka, Yoshitaka; Hirose, Hiroshi; Hirata, Akihiro (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002363381 A2 **20021218**, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-169923 20010605.

AB The compns. contain (A) a halogen-free epoxy resin contg. at least two epoxy groups per mol., (B) a phenol type hardening agent, and (C) a compd. contg. at least one carbon triple bond, e.g., an acetylene deriv. Thus, reacting 5.0 g bromobenzene with 3.57 g

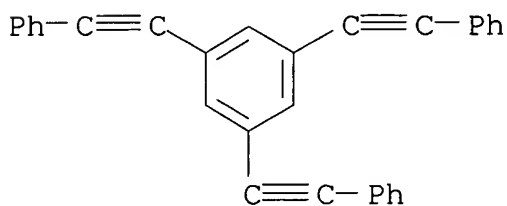
phenylacetylene gave 1,2-diphenylacetylene, 1.0 part of which was mixed with 7.6 parts YX 4000H (A component), 6.8 parts XL 225 (B component) and 83.5 parts fused silica to give a title compn.

IT **118688-56-5P**

(preps. of arom. acetylene derivs. as fireproofing agent for halogen-free epoxy-based semiconductor device sealing compns.)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**

(preps. of arom. acetylene derivs. as fireproofing agent for halogen-free epoxy-based semiconductor device sealing compns.)

L25 ANSWER 18 OF 50 ZCA COPYRIGHT 2006 ACS on STN

137:278756 Palladium-Catalyzed Cross-Alkynylation of Aryl Bromides by Sodium Tetraalkynylaluminates. Gelman, Dmitri; Tselikhovsky, Dmitry; Molander, Gary A.; Blum, Jochanan (Department of Organic Chemistry, Hebrew University, Jerusalem, 91904, Israel). Journal of Organic Chemistry, 67(18), 6287-6290 (English) **2002**.

CODEN: JOCEAH. ISSN: 0022-3263. OTHER SOURCES: CASREACT

137:278756. Publisher: American Chemical Society.

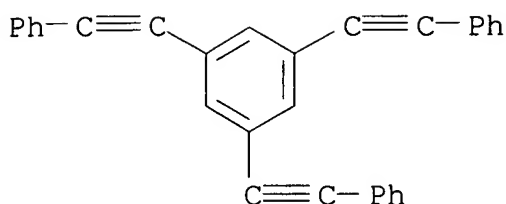
AB Sodium tetraalkynylaluminates, prepd. from NaAlH₄ and terminal alkynes, cross-couple with aryl bromides in the presence of Pd(0) and Pd(II) catalysts. The reactions take place in boiling THF or DME. The process is applicable to both homo- and heterocyclic aryl bromides and can be used for conversion of polybromo compds. into polyalkynes. The reactions are high yielding and selective, free of undesired homocoupling and hydrogenolysis processes. The reagents selectively react with the ring-bound bromine atoms but do not affect chloro, cyano, triflate, or ester functions.

IT **118688-56-5P**

(palladium-catalyzed cross-alkynylation of aryl bromides by sodium tetraalkynylaluminates)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**

(palladium-catalyzed cross-alkynylation of aryl bromides by sodium tetraalkynylaluminates)

L25 ANSWER 19 OF 50 ZCA COPYRIGHT 2006 ACS on STN

137:109997 Polyarylene composition with enhanced modulus profile. Godschalx, James P.; Niu, Qing Shan J.; Bruza, Kenneth J.; Cummins, Clark H.; Townsend, Paul H. (Dow Global Technologies Inc., USA). U.S. Pat. Appl. Publ. US 2002099158 A1 **20020725**, 11 pp., Cont.-in-part of U.S. Ser. No. 447,012. (English). CODEN: USXXCO. APPLICATION: US 2002-44366 20020111. PRIORITY: US 1999-447012 19991122.

AB A polyarylene compn., in which resin does not undergo a significant drop in modulus at temps. above 300.degree. during cure and is useful in making microelectronic devices, comprises a partially polymd. reaction product of a reaction mixt. comprising a compd. having two or more cyclopentadienone functional groups and a compd. having three or more acetylene functional groups, wherein the compn. is further characterized by one or more of the following characteristics: (a) the ratio of cyclopentadienone groups to acetylene groups in the reaction mixt. is at least 3 to 4 and less than 2 to 1, (b) the compd. having three or more acetylene functional groups is selected from tris(phenylethynyl)diphenyl ethers, tris(phenylethynyl)-o-terphenyls, 4',4',4'-tris(phenylethynyl)-1,3,5-triphenylbenzene, and 3',3',3'-tris(phenylethynyl)-1,3,5-triphenylbenzene, (c) the reaction mixt. further comprises a compd. which has the ability to react with non-functionalized aryl groups, and (d) the compn. further comprises a reagent selected from bis-ortho-diacetylenes, mono-ortho-diacetylenes, bistriazenes, tetrazines, bisazides, bissulfonylazides, and peroxides. This feature enables one to form porous films by avoiding pore collapse and/or using a wider variety of poragen materials.

IT **204521-32-4P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene **342652-87-3P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-88-4P**,

Benzenesulfonyl azide, 4,4'-oxybis-, polymer with 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-2,4-cyclopentadien-1-one] and 1,3,5-tris(phenylethynyl)benzene **342652-89-5P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[3,4-bis(phenylethynyl)benzene] and 1,3,5-tris(phenylethynyl)benzene **342652-90-8P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-91-9P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[[1,1'-biphenyl]-4,4'-diylbis(oxy-4,1-phenylene)]bis[3,3-dimethyl-1-triazene] and 1,3,5-tris(phenylethynyl)benzene **342652-93-1P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-94-2P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4-tris(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-95-3P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,4-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (polyarylene compn. with enhanced modulus profile)

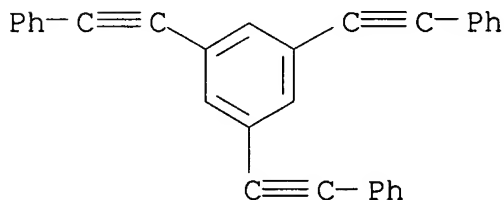
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

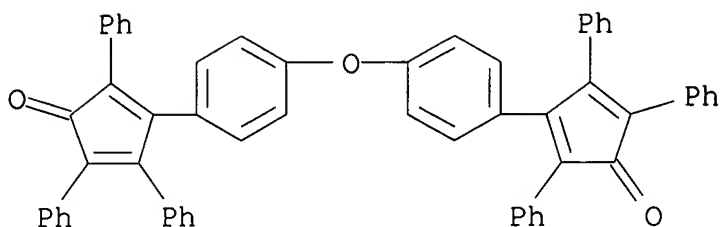
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CM 2

CRN 13092-45-0

CMF C58 H38 O3



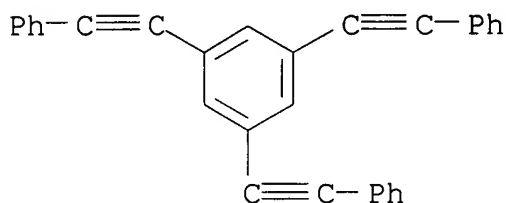
RN 342652-87-3 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

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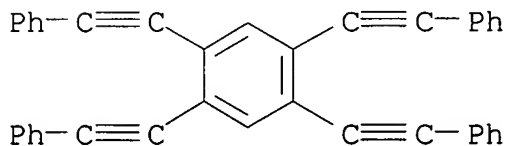
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CM 2

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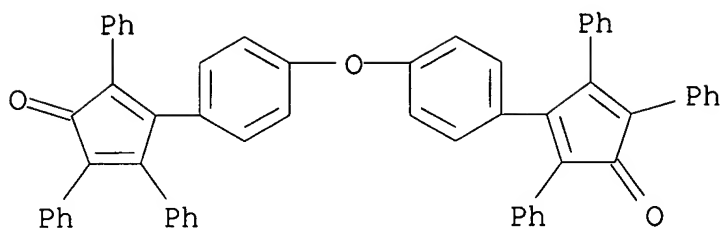
CMF C38 H22



CM 3

CRN 13092-45-0

CMF C58 H38 O3



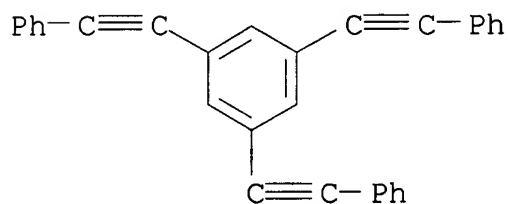
RN 342652-88-4 ZCA

CN Benzenesulfonyl azide, 4,4'-oxybis-, polymer with
3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-2,4-cyclopentadien-1-
one] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

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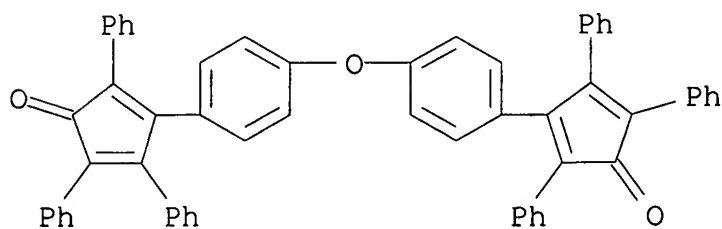
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CM 2

CRN 13092-45-0

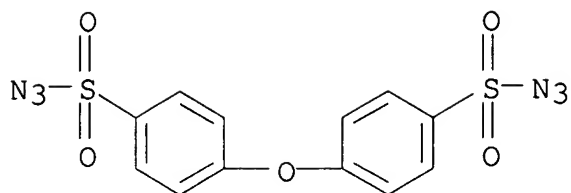
CMF C58 H38 O3



CM 3

CRN 7456-68-0

CMF C12 H8 N6 O5 S2



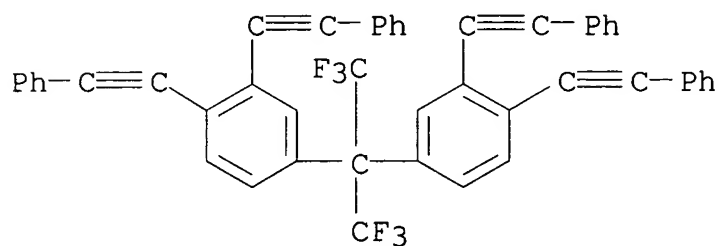
RN 342652-89-5 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[3,4-bis(phenylethynyl)benzene] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

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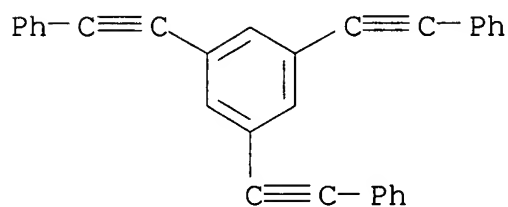
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CM 2

CRN 118688-56-5

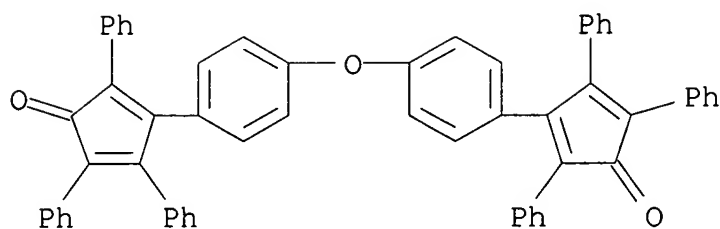
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



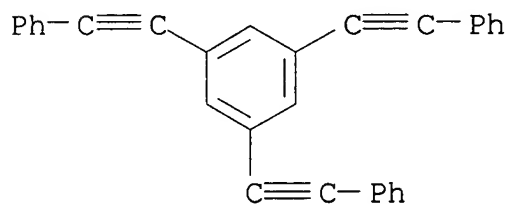
RN 342652-90-8 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

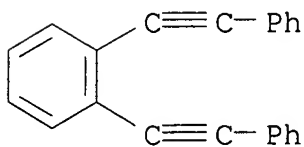
CMF C30 H18



CM 2

CRN 13203-60-6

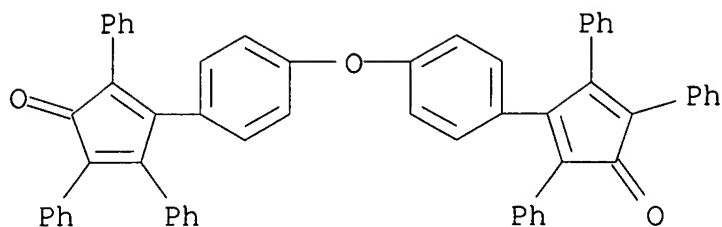
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CM 3

CRN 13092-45-0

CMF C58 H38 O3



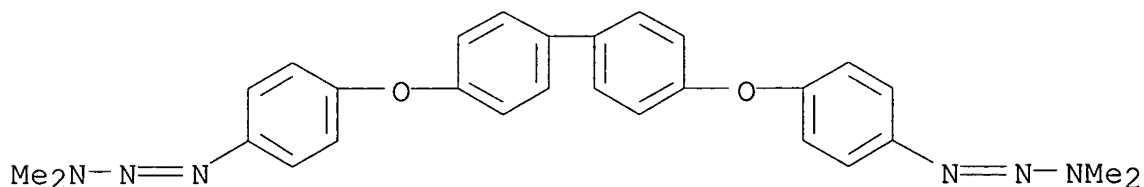
RN 342652-91-9 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[[1,1'-biphenyl]-4,4'-diylbis(oxy-4,1-phenylene)]bis[3,3-dimethyl-1-triazene] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 136528-30-8

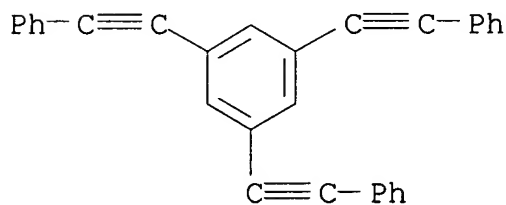
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CM 2

CRN 118688-56-5

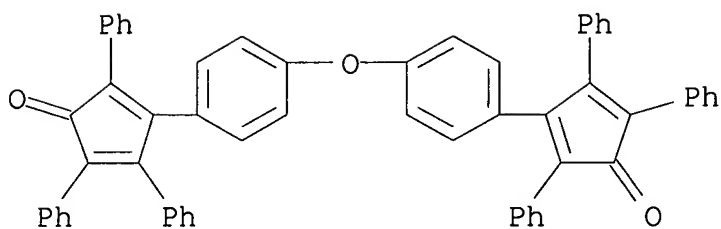
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



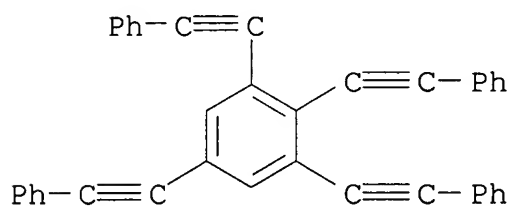
RN 342652-93-1 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 248278-76-4

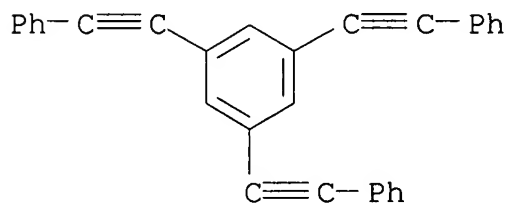
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CM 2

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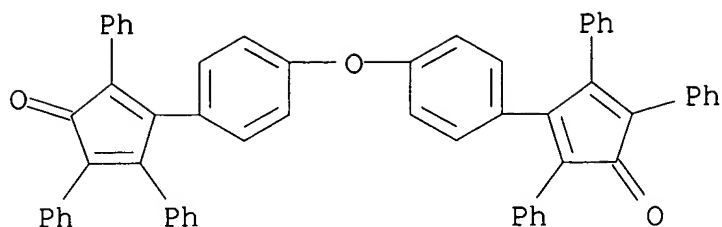
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



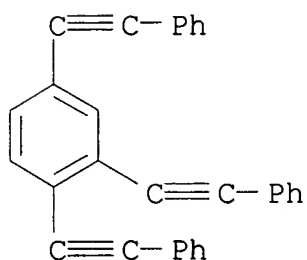
RN 342652-94-2 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4-tris(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

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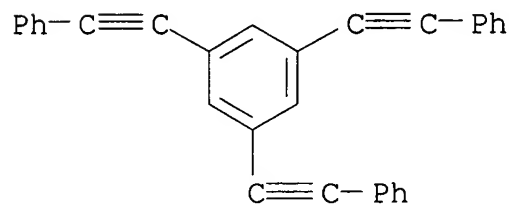
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CM 2

CRN 118688-56-5

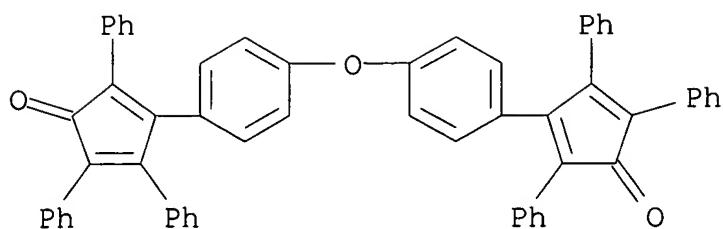
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CM 3

CRN 13092-45-0

CMF C58 H38 O3



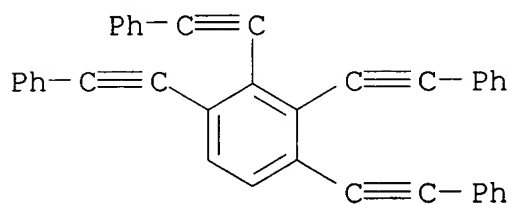
RN 342652-95-3 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,4-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 272128-91-3

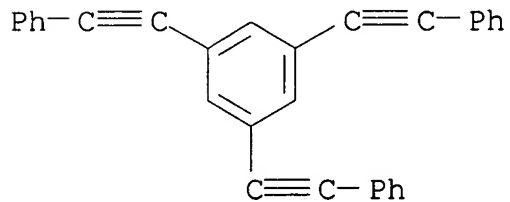
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CM 2

CRN 118688-56-5

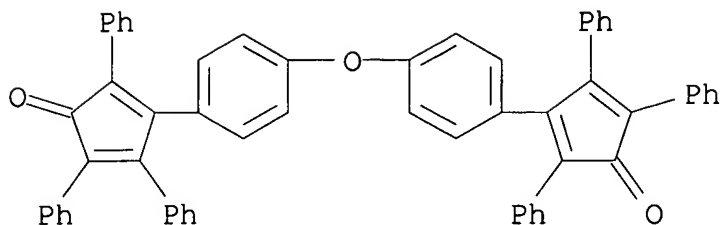
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



IT **204521-32-4P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene **342652-87-3P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-88-4P**, Benzenesulfonyl azide, 4,4'-oxybis-, polymer with 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-2,4-cyclopentadien-1-one] and 1,3,5-tris(phenylethynyl)benzene **342652-89-5P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[3,4-bis(phenylethynyl)benzene] and 1,3,5-tris(phenylethynyl)benzene **342652-90-8P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-91-9P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[[1,1'-biphenyl]-4,4'-diylbis(oxy-4,1-phenylene)]bis[3,3-dimethyl-1-triazene] and 1,3,5-tris(phenylethynyl)benzene **342652-93-1P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-94-2P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4-tris(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene **342652-95-3P**, 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,4-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene
(polyarylene compn. with enhanced modulus profile)

L25 ANSWER 20 OF 50 ZCA COPYRIGHT 2006 ACS on STN

137:78686 Linear and nonlinear polarizabilities of fragmental molecules for the phenylacetylene dendrimers. Nomura, Yasushi; Sugishita, Takashi; Narita, Susumu; Shibuya, Tai-Ichi (Department of Chemistry, Faculty of Textile Science and Technology, Shinshu University, Nagano, 386-8567, Japan). Bulletin of the Chemical Society of Japan, 75(3), 481-486 (English) **2002**. CODEN: BCSJA8. ISSN: 0009-2673. Publisher: Chemical Society of Japan.

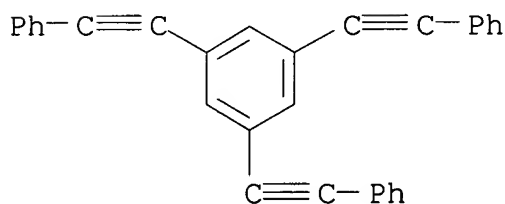
AB Linear and nonlinear polarizabilities of small fragmental mols. for the phenylacetylene dendrimethylrs were calcd. with the frequency-dependent moment schemes based on the sum-over-states expressions of the polarizabilities, including all of the singly-excited configurations in the semiempirical CNDO/S approxn. The smallest system, consisting of two benzene rings connected by an acetylene chain, corresponds to a mol. unit that is usually adopted in the exciton model for a theor. anal. of the phenylacetylene dendrimethylrs. The dependences of the polarizabilities upon the mol. size were examd. The linear polarizability in the static-field condition increases linearly with the no. of acetylene chains (N). MO calcns. of the nonlinear polarizabilities of these mols. were carried out for the first time. The third-order polarizability in the static-field condition depends quadratically upon N, which suggests that two chromophores at a time participate in the optical process of the third-order polarization.

IT **118688-56-5**

(linear and nonlinear polarizabilities of fragmental mols. for the phenylacetylene dendrimers)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**

(linear and nonlinear polarizabilities of fragmental mols. for the phenylacetylene dendrimers)

L25 ANSWER 21 OF 50 ZCA COPYRIGHT 2006 ACS on STN

137:63654 Method for determination of cure and oxidation of spin-on dielectric polymers. Mohler, Carol E.; Devries, Robert A. (USA). U.S. Pat. Appl. Publ. US 2002086429 A1 **20020704**, 19 pp. (English). CODEN: USXXCO. APPLICATION: US 2000-751484 20001228.

AB This invention is a method comprising prepg. a sample by coating a thin film of a precursor material, which is free of fluorescent probe mols. onto a substrate and subjecting the precursor material to conditions to attempt to cause cure of the precursor to an org., arom., polymer having a dielec. const. of less than 3.0, exposing the sample to radiation having a wavelength in the range of 200 to 500 nm, detecting a resulting emission of radiation, and comparing the emission to the emission for a known cured, non-oxidized std. for the polymer. An oligomer soln. made by the reaction of

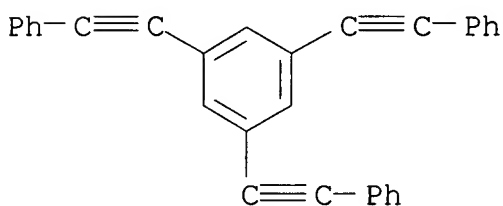
3,3'-(oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone) and 1,3,5-tris(phenylethynyl)benzene in .gamma.-butyrolactone was later dild. with cyclohexanone and was spin coated on silicon substrates. The coated wafers were baked for 90 s at 320.degree. on a N blanketed hot plate to remove residual solvent, and then placed on a N blanketed hot plate at 400.degree. for 2, 5, 10, 20 and 30 min. Fluorescence emission spectra were collected on the samples using a Spex Fluorolog fluorimeter with front-face reflection optics, with excitation at 355 nm. The fluorescence spectra were normalized by the intensity of the band near 475 nm. The normalized fluorescence spectra showed two bands that changed with cure time, i.e., at 397 nm and at 428 nm. The plot of the normalized ratios I428/I475 and I397/I475 showed a decrease with cure time from 2 to 30 min, with a larger percentage change in the I397/I475 ratio. Either band or both bands can be used to quantitate cure.

IT **204521-32-4**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer
 (method for detn. of cure and oxidn. of spin-on dielec. polymers)
 RN 204521-32-4 ZCA
 CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

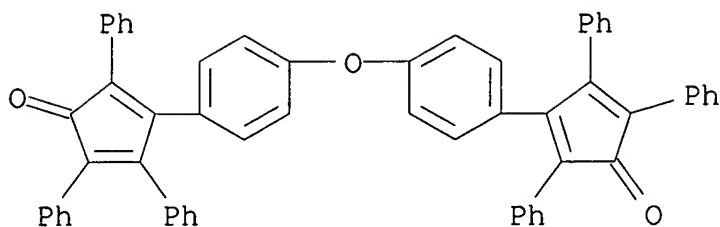
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3



IT **204521-32-4**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer
(method for detn. of cure and oxidn. of spin-on dielec. polymers)

L25 ANSWER 22 OF 50 ZCA COPYRIGHT 2006 ACS on STN

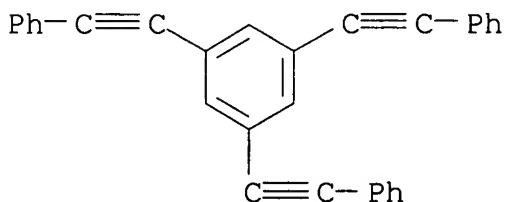
136:199803 Ab initio study on the structural and optical properties of phenylacetylene molecules. Shimoi, Yukihiro; Friedman, Barry A. (Electrotechnical Laboratory, Tsukuba, 305-8568, Japan). MCLC S&T, Section B: Nonlinear Optics, 26(1-3), 169-176 (English) **2000**. CODEN: MCLOEB. ISSN: 1058-7268. Publisher: Gordon & Breach Science Publishers.

AB Ab initio calcns. are carried out for several phenylacetylene mols. in order to investigate their geometrical and optical properties. We mainly focus our attention on the effect of the torsion of Ph rings around the triple bonds on these properties. We demonstrate that the electronic ground state has a quite small barrier height against the ring torsion in the range of 0.4-0.5 kcal/mol/(triple bond) for the mols. without a connection at the ortho-position. The torsion gives rise to a large shift of the absorption gap in diphenylacetylene and mol. with para-connection, in sharp contrast to the almost flat energy surface in the ground state. On the other hand, in meta-connected mol., the gap changes little, when one of outer rings becomes perpendicular, suggesting that the extension of .pi. conjugation is inhibited by meta-connection.

IT **118688-56-5**, Benzene, 1,3,5-tris(phenylethynyl)-
(ab initio study on structural and optical properties of phenylacetylene derivs.)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**, Benzene, 1,3,5-tris(phenylethynyl)-
(ab initio study on structural and optical properties of
phenylacetylene derivs.)

L25 ANSWER 23 OF 50 ZCA COPYRIGHT 2006 ACS on STN

136:118876 Spin-on-dielectric compositions with coating enhancer.
Mills, Lynne K.; Dominowski, Jolee M.; Rose, Gene D.; Strand, Deidre
A.; Foster, Kenneth L.; Hahn, Stephen F. (The Dow Chemical Company,
USA). PCT Int. Appl. WO 2002006377 A1 **20020124**, 34 pp.
DESIGNATED STATES: W: CN, IL, JP, KR, SG; RW: AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (English).
CODEN: PIXXD2. APPLICATION: WO 2001-US22629 20010718. PRIORITY: US
2000-2000/PV219155 20000719.

AB This invention is a compn. comprising (a) an oligomer or polymer
dispersible in an org. solvent, having a low dielec. const., or
being curable to form a material having a low dielec. const., (b) at
least one org. solvent and (c) less than 1000 ppm of a polymeric
coating additive. The polymeric additive is characterized in that
it is miscible with component (a) and the solvent system but becomes
incompatible with the mixt. of component (a) and solvent during the
coating process. A compn. contained 3,3'-(oxydi-1,4-
phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-
tris(phenylethynyl)benzene copolymer and polyisoprene additive.

IT **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-
triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene
copolymer

(spin-on-dielec. compns. with coating enhancer)

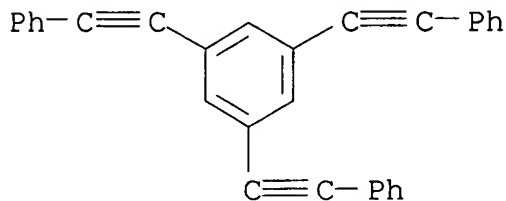
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-
triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA
INDEX NAME)

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CRN 118688-56-5

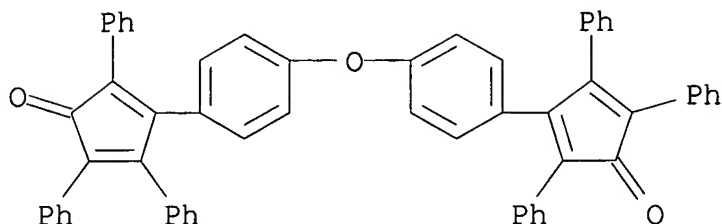
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3



IT **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer
(spin-on-dielec. compns. with coating enhancer)

L25 ANSWER 24 OF 50 ZCA COPYRIGHT 2006 ACS on STN

136:71337 Aromatic polyarylene-based compositions and their materials for electrically insulating film formation. Okada, Takashi; Nishikawa, Michinori; Yamada, Kinji (Jsr Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002003753 A2 **20020109**, 19 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-186519 20000621.

AB Title compns., useful for elec. insulator films with good crack, heat, and moisture resistance, comprise arom. polyarylenes, org. solvents, and radical developers and/or unsatd. compds. (e.g., polymerizable carbon-carbon double or triple bond-contg. compds.). A mixt. of cyclohexanone, 2,3-dimethyl-2,3-diphenylbutane, and 9,9-bis(methylsulfonyloxyphenyl)fluorene-2,4-dichlorotoluene copolymer was coated on a Si wafer to a 5-.mu.m thickness and baked at 80.degree. for 1 min and 380.degree. for 5 min to form a film showing no cracks after soaking in water for 2 h and 1% wt. loss temp. of 482.degree..

IT **383861-10-7P**, 9,9-Bis(4-methylsulfonyloxyphenyl)fluorene-2,4-dichlorotoluene-1,3,5-tris(phenylethynyl)benzene copolymer
(crosslinked; arom. polyarylene-based crosslinkable coatings for elec. insulators with crack and heat resistance)

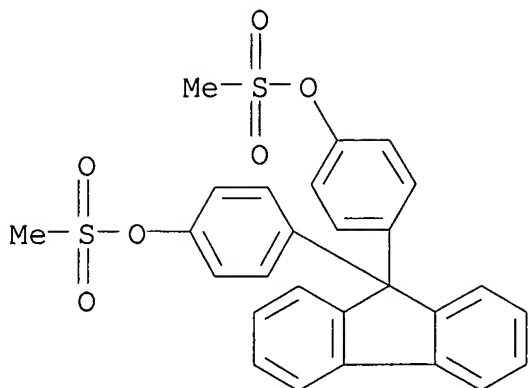
RN 383861-10-7 ZCA

CN Phenol, 4,4'-(9H-fluoren-9-ylidene)bis-, dimethanesulfonate, polymer with 2,4-dichloro-1-methylbenzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 211447-74-4

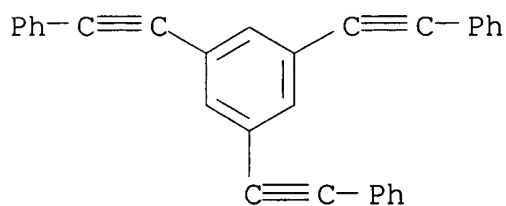
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CM 2

CRN 118688-56-5

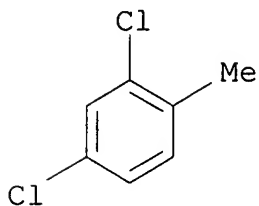
CMF C30 H18



CM 3

CRN 95-73-8

CMF C7 H6 Cl2



IT **383861-10-7P**, 9,9-Bis(4-methylsulfonyloxyphenyl)fluorene-2,4-dichlorotoluene-1,3,5-tris(phenylethynyl)benzene copolymer (crosslinked; arom. polyarylene-based crosslinkable coatings for elec. insulators with crack and heat resistance)

136:54559 Dielectric film-forming resin compositions and their manufacture and use on semiconductor devices or the like. Nishikawa, Michinori; Okada, Takashi; Yamada, Kinji (JSR Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001348422 A2 **20011218**, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-168567 20000606.

AB The compns. giving dielec. films with good heat resistance are obtained from the polymn. products of an arylenebis(triphenyl-1,4-pentadien-3-one) compd. with arom. compd. bearing multiple 2-phenylethynyl groups or/and arom. compd. bearing multiple ethynyl groups in an org. solvent. Thus, heating a soln. contg. di-Ph ether-4,4'-bis(2,4,5-triphenyl-1,4-pentadien-3-one) 7.83 and 1,2,4-tri[2-(p-tolyl)ethynyl]benzene 4.20 in N-methyl-2-pyrrolidone 60 g at 200.degree. for 10 h gave a polymer with Mw 2400 in soln., which was filtered and spin-coated on a Si wafer to give a coat film with dielec. const. 2.45 and 5% wt. loss temp. 502.degree..

IT **381227-38-9P**

(dielec. film-forming resin compns. and manuf. and use on semiconductor devices or like)

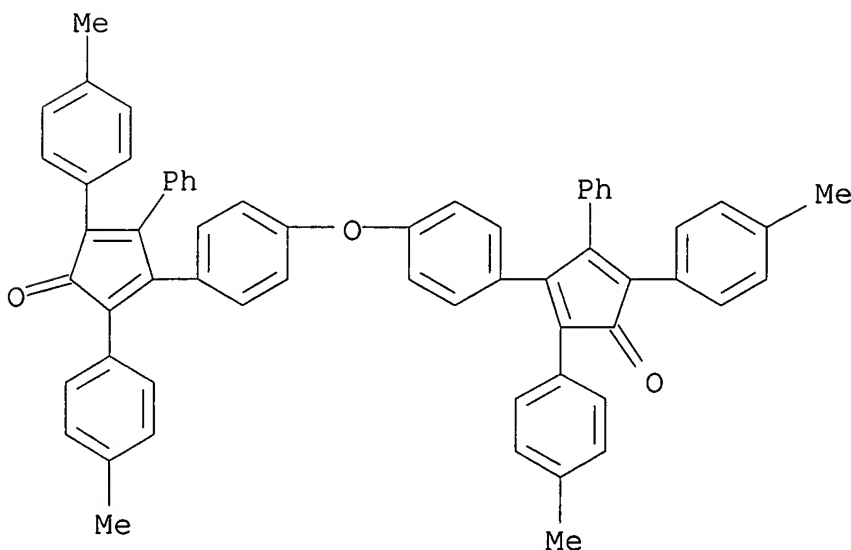
RN 381227-38-9 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,5-bis(4-methylphenyl)-4-phenyl-, polymer with 1,2,4-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 381227-37-8

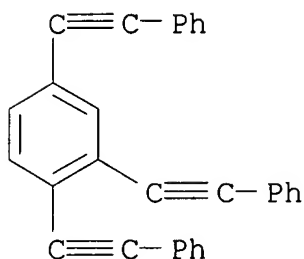
CMF C62 H46 O3



CM 2

CRN 151041-82-6

CMF C30 H18

IT **381227-38-9P**

(dielec. film-forming resin compns. and manuf. and use on semiconductor devices or like)

L25 ANSWER 26 OF 50 ZCA COPYRIGHT 2006 ACS on STN

136:6034 Structures of bis- and tris(2-phenyl-o-carboran-1-yl)benzenes. Construction of three-dimensional structures converted from planar arylacetylenic arrays. Songkram, C.; Takaishi, K.; Yamaguchi, K.; Kagechika, H.; Endo, Y. (Graduate School of Pharmaceutical Sciences, University of Tokyo, Bunkyo-ku, Tokyo, 113-0033, Japan). Tetrahedron Letters, 42(36), 6365-6368 (English) **2001**. CODEN: TELEAY. ISSN: 0040-4039. OTHER SOURCES: CASREACT 136:6034. Publisher: Elsevier Science Ltd..

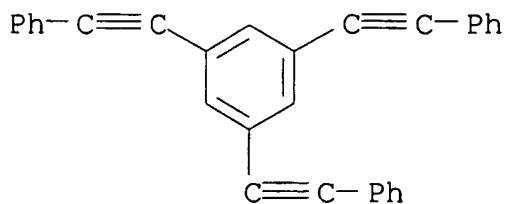
AB Title compds., which are composed of benzene nuclei linked through 1,2-dicarba-closo-dodecaborane (o-carborane), were synthesized and their structures were detd. by x-ray crystallog. 1,3-Bis(2-phenyl-o-carboran-1-yl)benzene and 1,3,5-tris(2-phenyl-o-carboran-1-yl)benzene (3) have syn stereochem. of all the terminal benzene rings, despite their steric overcrowding.

IT **118688-56-5P**

(prepn. and condensation reaction with decaborane)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)

IT **118688-56-5P**

(prepn. and condensation reaction with decaborane)

L25 ANSWER 27 OF 50 ZCA COPYRIGHT 2006 ACS on STN

135:20380 Polyarylene composition with enhanced modulus profile.

Godschalx, James P.; Bruza, Kenneth J.; Niu, Qing Shan J.; Cummins, Clark H.; Townsend, Paul H., III (The Dow Chemical Company, USA).

PCT Int. Appl. WO 2001038417 A1 **20010531**, 25 pp.

DESIGNATED STATES: W: CN, IL, JP, KR, SG; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English).

CODEN: PIXXD2. APPLICATION: WO 2000-US29963 20001031. PRIORITY: US 1999-447012 19991122.

AB A polyarylene compn., in which resin does not undergo a significant drop in modulus at temps. above 300.degree. during cure and is useful in making microelectronic devices, comprises a partially polyimd. reaction product of a reaction mixt. comprising a compd. having two or more cyclopentadienone functional groups and a compd. having three or more acetylene functional groups, wherein the compn. is further characterized by one or more of the following characteristics: (a) the ratio of cyclopentadienone groups to acetylene groups in the reaction mixt. is at least 3 to 4 and less than 2 to 1, (b) the compd. having three or more acetylene functional groups is selected from tris(phenylethynyl)diphenyl ethers, tris(phenylethynyl)-o-terphenyls, 4',4',4'-tris(phenylethynyl)-1,3,5-triphenylbenzene, and 3',3',3'-tris(phenylethynyl)-1,3,5-triphenylbenzene, (c) the reaction mixt. further comprises a compd. which has the ability to react with non-functionalized aryl groups, and (d) the compn. further comprises a reagent selected from bis-ortho-diacetylenes, mono-ortho-diacetylenes, bistriazenes, tetrazines, bisazides, bissulfonylazides, and peroxides. This feature enables one to form porous films by avoiding pore collapse and/or using a wider variety of poragen materials.

IT **204521-32-4P 342652-87-3P 342652-88-4P**
342652-89-5P 342652-90-8P 342652-91-9P
342652-93-1P 342652-94-2P 342652-95-3P

(polyarylene compn. with enhanced modulus profile)

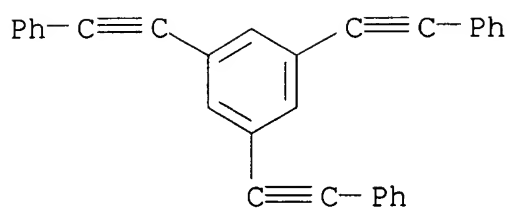
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

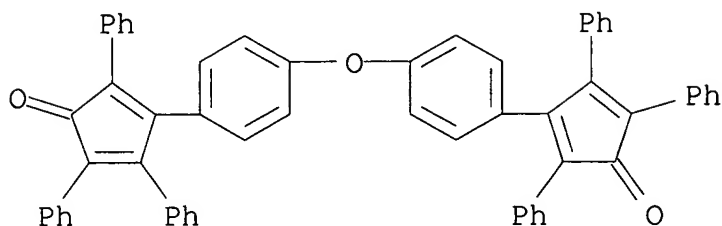
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CM 2

CRN 13092-45-0

CMF C58 H38 O3



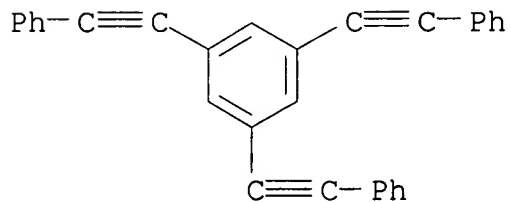
RN 342652-87-3 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

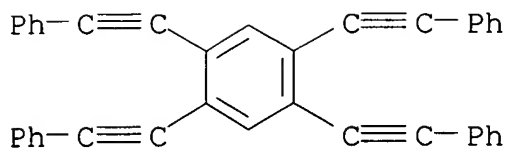
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CM 2

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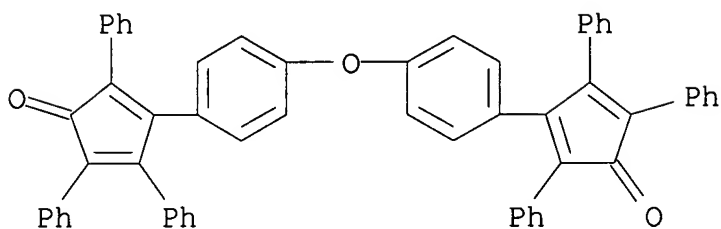
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CM 3

CRN 13092-45-0

CMF C58 H38 O3



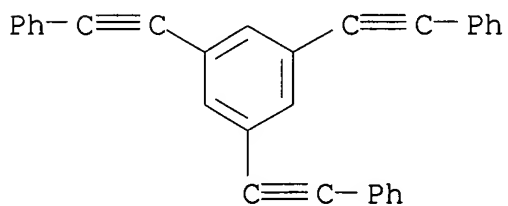
RN 342652-88-4 ZCA

CN Benzenesulfonyl azide, 4,4'-oxybis-, polymer with
 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-2,4-cyclopentadien-1-one] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

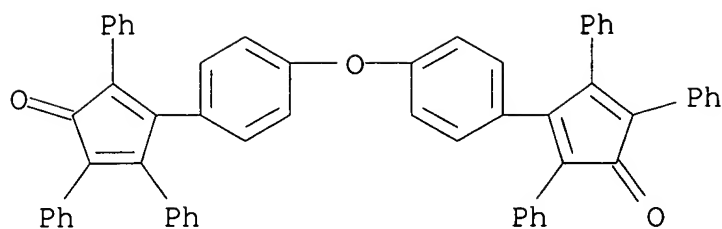
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CM 2

CRN 13092-45-0

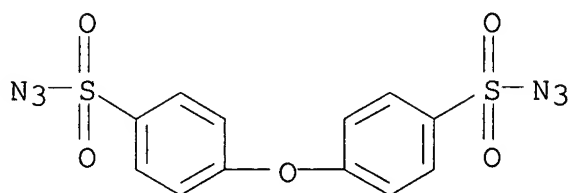
CMF C58 H38 O3



CM 3

CRN 7456-68-0

CMF C12 H8 N6 O5 S2



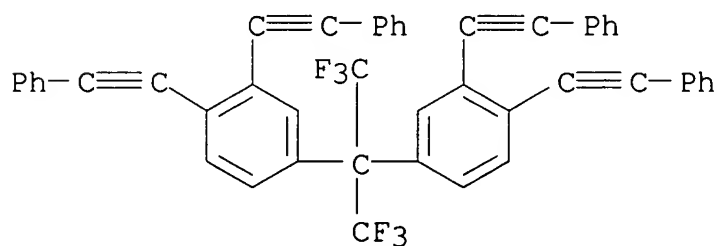
RN 342652-89-5 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[3,4-bis(phenylethynyl)benzene] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 189039-63-2

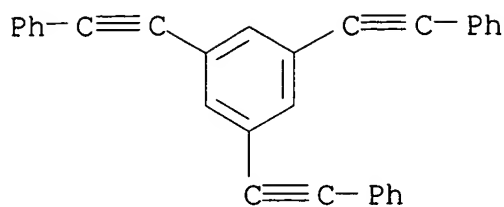
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CM 2

CRN 118688-56-5

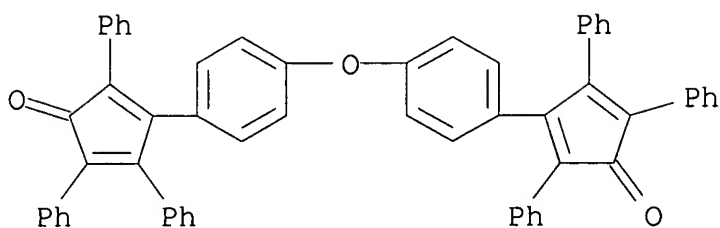
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CM 3

CRN 13092-45-0

CMF C58 H38 O3



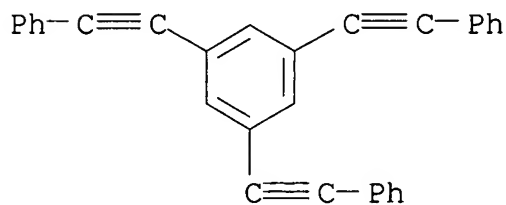
RN 342652-90-8 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

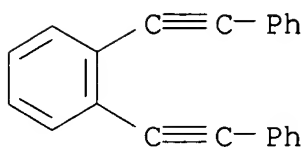
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CM 2

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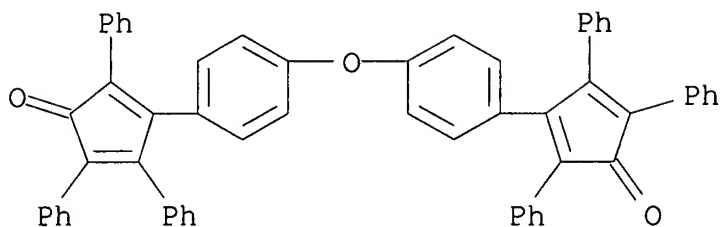
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CM 3

CRN 13092-45-0

CMF C58 H38 O3



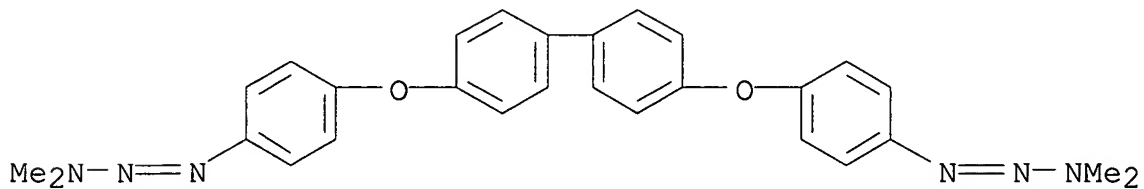
RN 342652-91-9 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-[[1,1'-biphenyl]-4,4'-diylbis(oxy-4,1-phenylene)]bis[3,3-dimethyl-1-triazene] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 136528-30-8

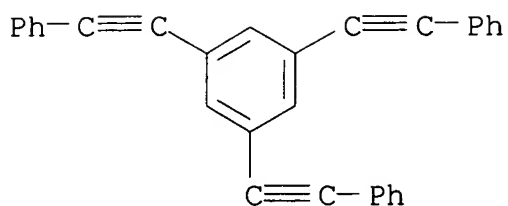
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CM 2

CRN 118688-56-5

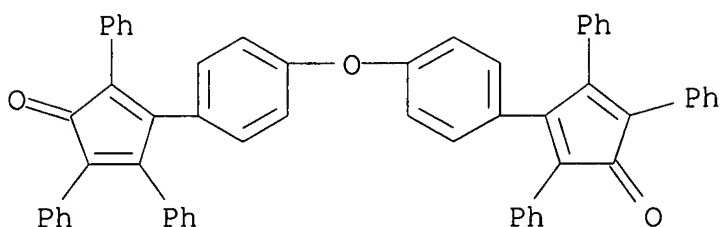
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



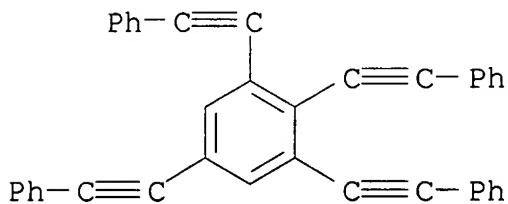
RN 342652-93-1 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,5-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 248278-76-4

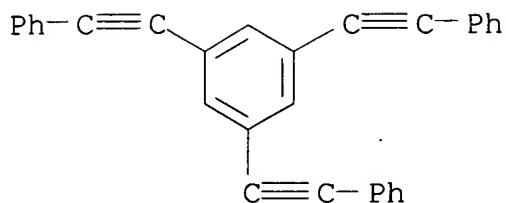
CMF C38 H22



CM 2

CRN 118688-56-5

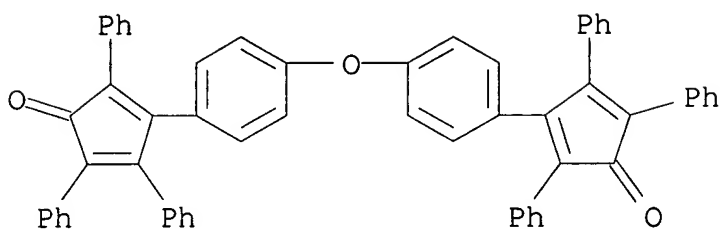
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



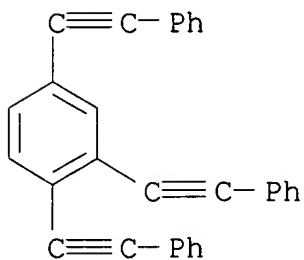
RN 342652-94-2 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,4-tris(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 151041-82-6

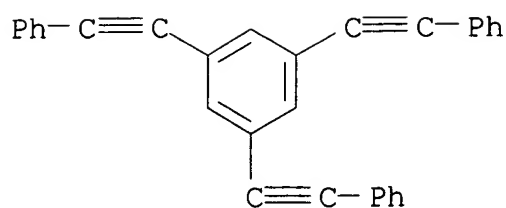
CMF C30 H18



CM 2

CRN 118688-56-5

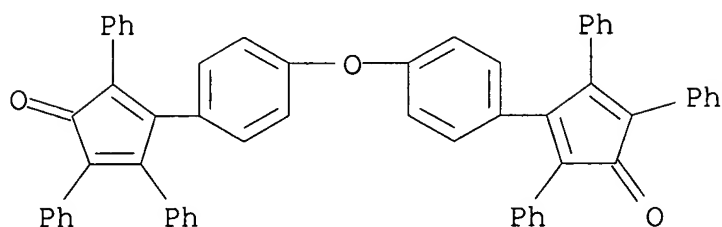
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



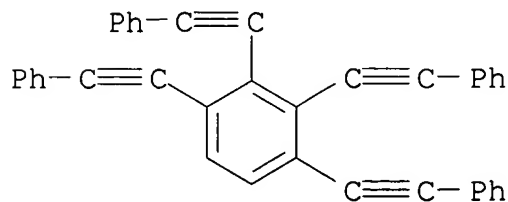
RN 342652-95-3 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,2,3,4-tetrakis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 272128-91-3

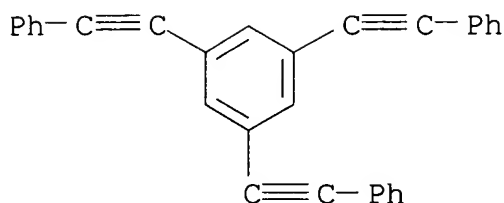
CMF C38 H22



CM 2

CRN 118688-56-5

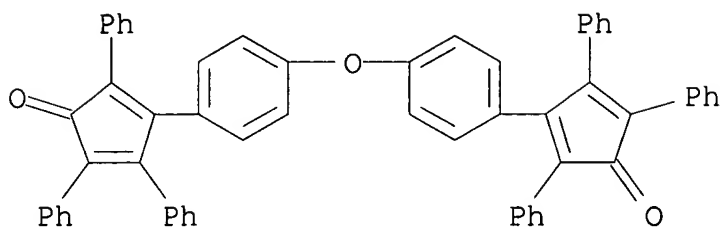
CMF C30 H18



CM 3

CRN 13092-45-0

CMF C58 H38 O3



IT **204521-32-4P 342652-87-3P 342652-88-4P**
342652-89-5P 342652-90-8P 342652-91-9P
342652-93-1P 342652-94-2P 342652-95-3P
 (polyarylene compn. with enhanced modulus profile)

L25 ANSWER 28 OF 50 ZCA COPYRIGHT 2006 ACS on STN

134:281633 Curable oligomer-containing composition for integrated circuit articles. Godschalx, James P.; Martin, Brian B.; Devries, Robert A.; Sulmans, Michael G.; Mills, Lynne K.; Pickering, Todd A. (Dow Chemical Co., USA). Jpn. Kokai Tokkyo Koho JP 2001106880 A2 **20010417**, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-272739 19990927.

AB Title compn. comprises (1) a curable oligomer having a no.-av. mol. wt. >3500 and a wt.-av. mol. wt. of >5400 and selected from (a) the reaction products of one or more polyfunctional compds. contg. two or more diene groups and at least one polyfunctional compd. contg. two or more dienophile groups wherein at least some of the polyfunctional compds. contain three or more reactive groups and (b) the reaction products of polyfunctional arom. compds. having at least one cyclopentadienone group and at least one acetylene group and (2) a solvent selected from N-methylpyrrolidinone, .gamma.-butyrolactone, mesitylene, and cyclohexanone. A process for making an integrated circuit article comprises providing a silicon wafer having thereon a pattern of raised features consisting of at least a partial pattern of elec. interconnects wherein there are

gaps between at least some features which have a depth of at least 1 .mu. and a width of less than 0.4 .mu., coating onto the wafer with the above compn. to form a thin film and fill the gaps, removing the solvents, and curing the compn.

IT **204521-32-4P**

(curable oligomer-contg. compn. for integrated circuit articles)

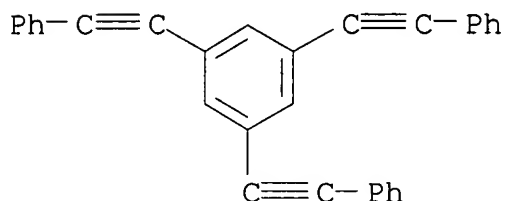
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

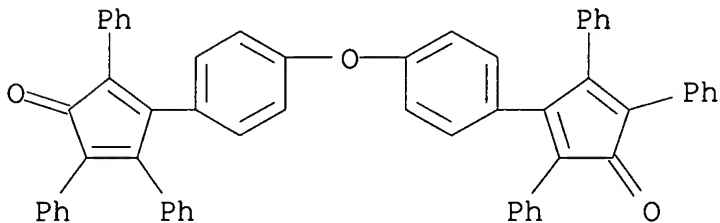
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3

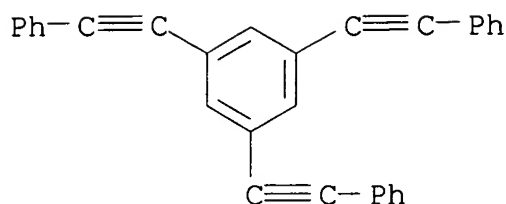


IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene

(prepn. of curable oligomer-contg. compn. for integrated circuit articles)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **204521-32-4P**

(curable oligomer-contg. compn. for integrated circuit articles)

IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene

(prepn. of curable oligomer-contg. compn. for integrated circuit articles)

L25 ANSWER 29 OF 50 ZCA COPYRIGHT 2006 ACS on STN

134:252113 A highly selective synthesis of diarylethynes and their oligomers by a palladium-catalyzed Sonogashira coupling reaction under phase transfer conditions. Chow, Hak-Fun; Wan, Chi-Wai; Low, Kam-Hung; Yeung, Ying-Yeung (Department of Chemistry, The Chinese University of Hong Kong, Shatin Hong Kong, Peop. Rep. China). Journal of Organic Chemistry, 66(5), 1910-1913 (English)

2001. CODEN: JOCEAH. ISSN: 0022-3263. OTHER SOURCES: CASREACT 134:252113. Publisher: American Chemical Society.

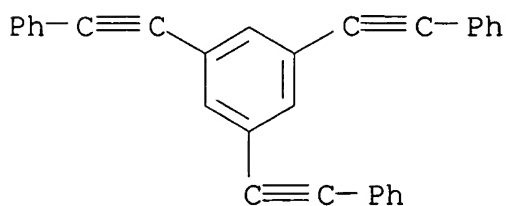
AB In contrast to the original Sonogashira method, very little Hay homocoupling product was formed under the new reaction protocol. This method also alleviates the need to use excess aryne to promote the cross-coupling efficiency. Furthermore, under the new reaction conditions, the cross-coupling products were less likely contaminated with residual starting materials and the various side products and could be obtained in good yields and purity.

IT **118688-56-5P**

(prepn. of diarylethynes and oligomers by palladium-catalyzed Sonogashira coupling under phase transfer conditions)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**

(prepn. of diarylethynes and oligomers by palladium-catalyzed Sonogashira coupling under phase transfer conditions)

L25 ANSWER 30 OF 50 ZCA COPYRIGHT 2006 ACS on STN

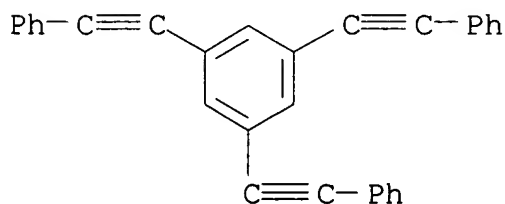
133:207557 Phenyl/pentafluorophenyl interactions and the generation of ordered mixed crystals: sym-tri(phenylethynyl)benzene and sym-tris(perfluorophenylethynyl)benzene. Ponzini, Francesco; Zaghera, Ralph; Hardcastle, Kenneth; Siegel, Jay S. (Department of Chemistry, University of California - San Diego, La Jolla, CA, 92093-0358, USA). Angewandte Chemie, International Edition, 39(13), 2323-2325 (English) **2000**. CODEN: ACIEF5. ISSN: 1433-7851. Publisher: Wiley-VCH Verlag GmbH.

AB Sym-tri(phenylethynyl)benzene and the resp. title compds. (I) and sym-tris(perfluorophenylethynyl)benzene (II) were prep'd., by Sonogoshira coupling, and a 1:1 mixt. were ground together to give a I.cntdot.II solid whose crystallog. and conformation were compared to that of the each of the components. Design principles and predictability in crystal engineering remain a frontier question in supramol. chem. Simple ideas like H-bond complementarity have made it possible to reduce the gamut of structures and to increase the chances that short-range supramol. order will appear in the solid state. The elucidation of other locally favored motifs, such as those induced by polar- π interactions, expands control in the engineering of solids. Indeed, the use of phenyl/perfluorophenyl attractions is a useful and reliable way to control local order in crystal packing. The underlying physics of this interaction is not limited to crystal packing; therefore, one could apply this principle to a no. of constructions and exploit it in related short-range packing problems such as receptor-substrate interactions.

IT **118688-56-5P**, sym-(Triphenylethynyl)benzene (crystallog.; phenyl/pentafluorophenyl interactions and generation of ordered mixed crystals of sym-tri(phenylethynyl)benzene and sym-tris(perfluorophenylethynyl)benzene)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



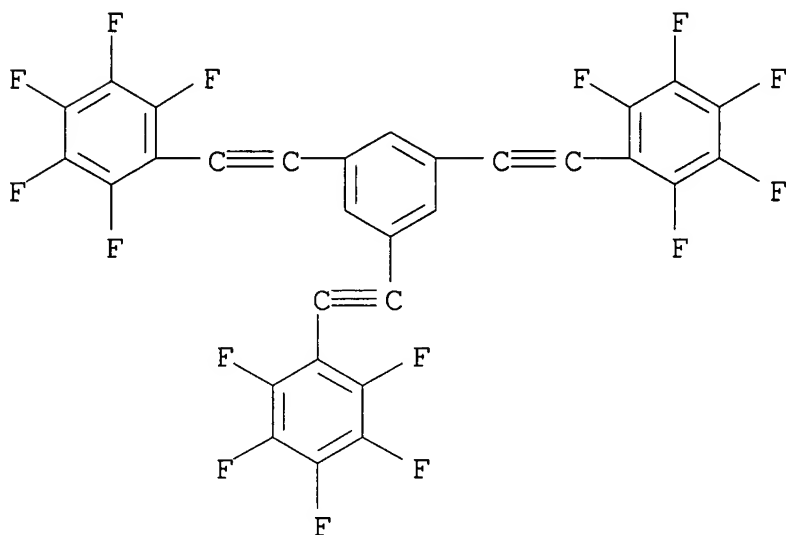
IT **289914-55-2P**

(phenyl/pentafluorophenyl interactions and generation of ordered mixed crystals of sym-tri(phenylethynyl)benzene and sym-tris(perfluorophenylethynyl)benzene)

RN 289914-55-2 ZCA
 CN Benzene, 1,3,5-tris[(pentafluorophenyl)ethynyl]-, compd. with
 1,3,5-tris(phenylethynyl)benzene (1:1) (9CI) (CA INDEX NAME)

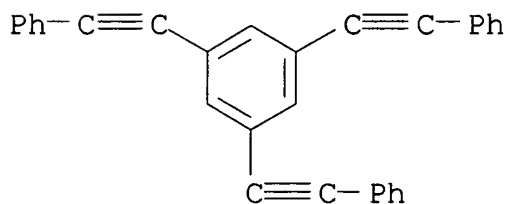
CM 1

CRN 289914-54-1
 CMF C30 H3 F15



CM 2

CRN 118688-56-5
 CMF C30 H18



IT **118688-56-5P**, sym-(Triphenylethynyl)benzene
 (crystallog.; phenyl/pentafluorophenyl interactions and
 generation of ordered mixed crystals of sym-
 tri(phenylethynyl)benzene and sym-tris(perfluorophenethynyl)benze
 ne)
 IT **289914-55-2P**
 (phenyl/pentafluorophenyl interactions and generation of ordered

mixed crystals of sym-tri(phenylethynyl)benzene and
sym-tris(perfluorophenylethynyl)benzene)

L25 ANSWER 31 OF 50 ZCA COPYRIGHT 2006 ACS on STN

133:90212 Low-dielectric-constant polyphenylenes having good adhesion and toughness and articles made with such polymers. Shaffer, Edward O., II; Godschalx, James P.; Howard, Kevin E.; Townsend, Paul H., III (The Dow Chemical Company, USA). PCT Int. Appl. WO 2000040637 A1 **20000713**, 28 pp. DESIGNATED STATES: W: CN, JP, KR, SG; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US30526 19991221. PRIORITY: US 1999-PV115280 19990108.

AB A cured polyphenylene polymer having a glass transition temp. no greater than 465.degree. is manufd. by Diels Alder reaction between .gtoreq.1 compd. having .gtoreq.2 diene groups and .gtoreq.1 compd. having .gtoreq.2 dienophile groups, with .gtoreq.1 of these compds. having .gtoreq.3 of these groups. An integrated circuit article having a fracture toughness as detd. by the modified edge lift off test of at least 0.3 MPa-M1/2 contains this polymer. A soln. of a typical oligomer was manufd. by heating .gamma.-butyrolactone contg. 30% mixt. of 3,3'-(oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone) 0.5, 4,4'-bis(phenylethynyl)diphenyl ether 0.5, and 1,3,5-tris(phenylethynyl)benzene 1 mol 48 h at 200.degree..

IT **204521-29-9P 204521-32-4P**

(low-dielec.-const. polyphenylenes having good adhesion and toughness for integrated circuit insulators)

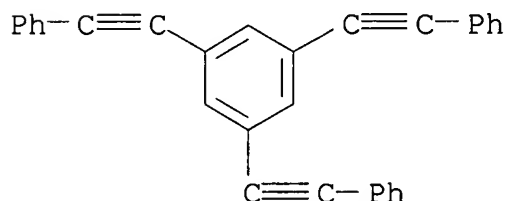
RN 204521-29-9 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-oxybis[4-(phenylethynyl)benzene] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

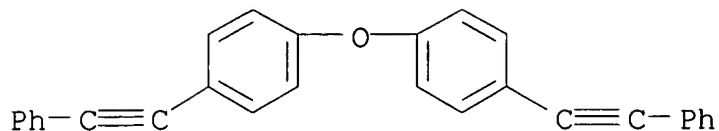
CRN 118688-56-5

CMF C30 H18



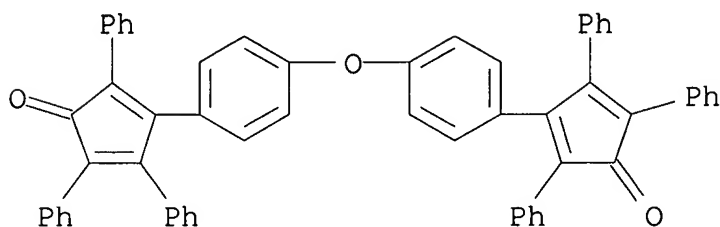
CM 2

CRN 59745-29-8
CMF C28 H18 O



CM 3

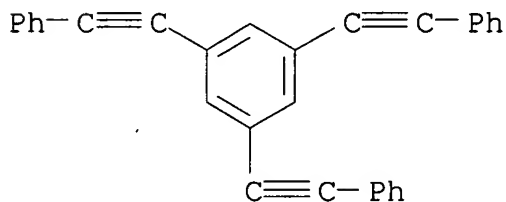
CRN 13092-45-0
CMF C58 H38 O3



RN 204521-32-4 ZCA
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

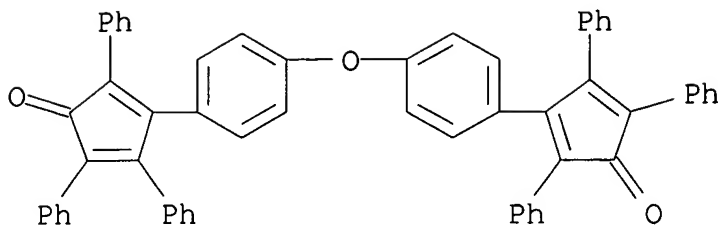
CM 1

CRN 118688-56-5
CMF C30 H18

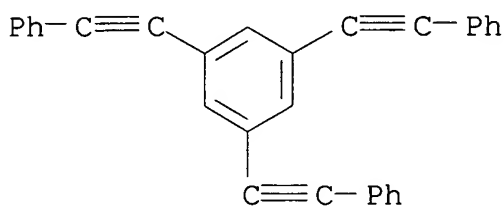


CM 2

CRN 13092-45-0
CMF C58 H38 O3



IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
 (monomer; low-dielec.-const. polyphenylenes having good adhesion
 and toughness for integrated circuit insulators)
 RN 118688-56-5 ZCA
 CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **204521-29-9P 204521-32-4P**
 (low-dielec.-const. polyphenylenes having good adhesion and
 toughness for integrated circuit insulators)
 IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
 (monomer; low-dielec.-const. polyphenylenes having good adhesion
 and toughness for integrated circuit insulators)

L25 ANSWER 32 OF 50 ZCA COPYRIGHT 2006 ACS on STN
 133:89975 Crosslinkable polyphenylene oligomers and polymers useful as
 dielectric resins in microelectronic fabrication. Godschalx, James
 P.; Romer, Duane R.; So, Ying Hung; Lysenko, Zenon; Mills, Michael
 E.; Buske, Gary R.; Townsend, Paul H., III; Smith, Dennis W., Jr.;
 Martin, Steven J.; Devries, Robert A. (Dow Chemical Co., USA). Jpn.
 Kokai Tokyo Koho JP 2000191752 A2 **20000711**, 68 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-370438 19981225.
 AB The oligomers and polymers are the Diels-Alder reaction products of
 compds. bearing .gtoreq.2 diene functional groups such as
 cyclopentadienone groups with compds. bearing .gtoreq.2 dienophile
 functional groups such as arom. acetylene groups where at least 1 of
 the compds. has 3 of the functional groups. Resin compns. contg.
 the oligomers and polymers have low dielec. const., good gap fill,
 planarizing property and resistance to heat and moisture. Thus,
 heating 3,3'-(1,4-phenylene)bis(2,5-di(4-fluorophenyl)-4-
 phenylcyclopentadienone) 316 with 1,3-bis(phenylethynyl)benzene 72
 and 1,3,5-tris(phenylethynyl)benzene 44 mg in 1,3-diisopropylbenzene

at reflux for 42 h gave a viscous product which was spin coated on a wafer and heated at 400.degree. for 1 h to give a film.

IT **204521-26-6P 204521-29-9P 204521-31-3P**

(crosslinkable polyphenylene oligomers and polymers useful as dielec. resins in microelectronic fabrication)

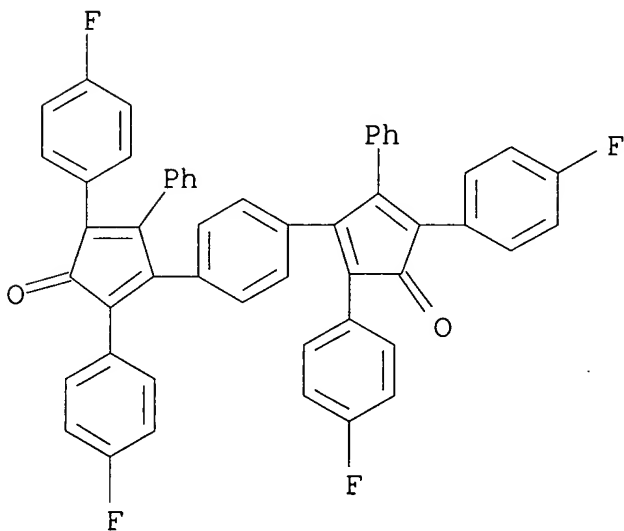
RN 204521-26-6 ZCA

CN 1,4-Cyclopentadien-1-one, 3,3'-(1,4-phenylene)bis[2,5-bis(4-fluorophenyl)-4-phenyl-, polymer with 1,3-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 204521-23-3

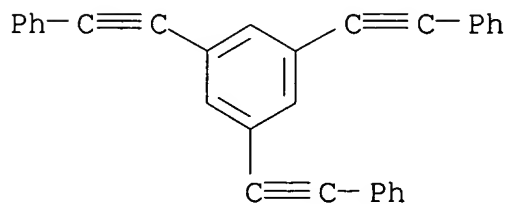
CMF C52 H30 F4 O2



CM 2

CRN 118688-56-5

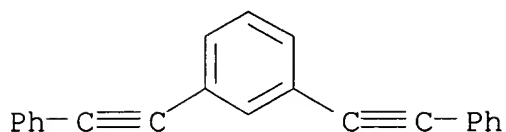
CMF C30 H18



CM 3

CRN 13141-36-1

CMF C22 H14



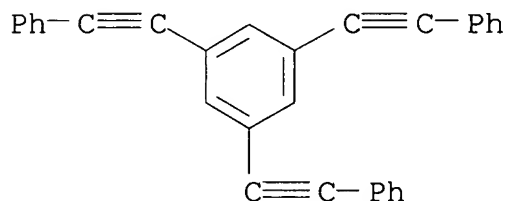
RN 204521-29-9 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-oxybis[4-(phenylethynyl)benzene] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

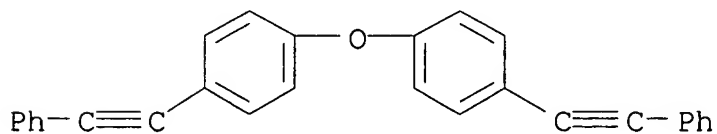
CMF C30 H18



CM 2

CRN 59745-29-8

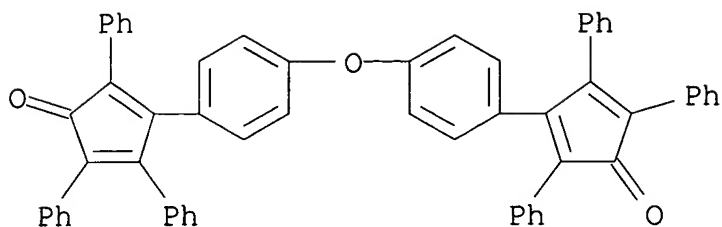
CMF C28 H18 O



CM 3

CRN 13092-45-0

CMF C58 H38 O3



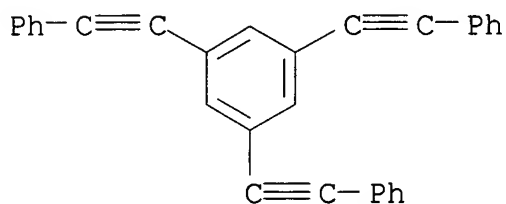
RN 204521-31-3 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

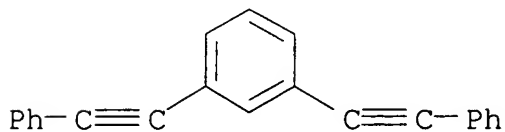
CMF C30 H18



CM 2

CRN 13141-36-1

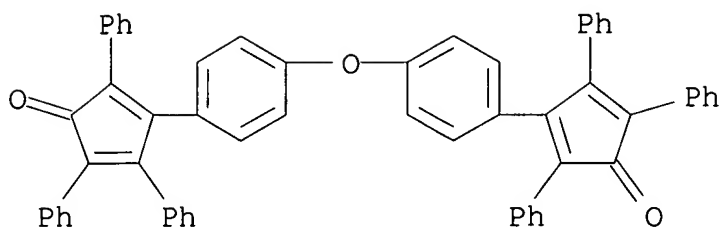
CMF C22 H14



CM 3

CRN 13092-45-0

CMF C58 H38 O3

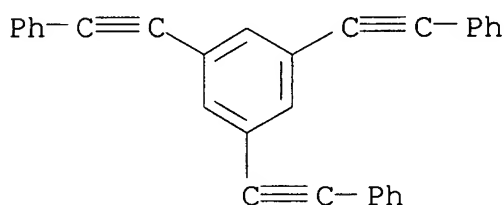


IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
151041-82-6P

(intermediate; crosslinkable polyphenylene oligomers and polymers
 useful as dielec. resins in microelectronic fabrication)

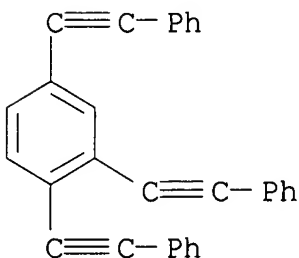
RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-
 triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene
 copolymer

(oligomer; crosslinkable polyphenylene oligomers and polymers
 useful as dielec. resins in microelectronic fabrication)

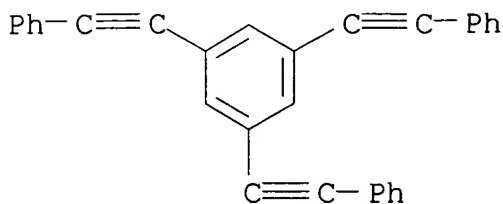
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-
 triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA
 INDEX NAME)

CM 1

CRN 118688-56-5

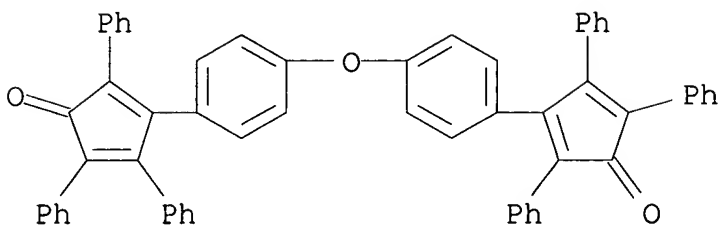
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3

IT **204521-26-6P 204521-29-9P 204521-31-3P**

(crosslinkable polyphenylene oligomers and polymers useful as dielec. resins in microelectronic fabrication)

IT **118688-56-5P, 1,3,5-Tris(phenylethynyl)benzene****151041-82-6P**

(intermediate; crosslinkable polyphenylene oligomers and polymers useful as dielec. resins in microelectronic fabrication)

IT **204521-32-4P, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene copolymer**

(oligomer; crosslinkable polyphenylene oligomers and polymers useful as dielec. resins in microelectronic fabrication)

L25 ANSWER 33 OF 50 ZCA COPYRIGHT 2006 ACS on STN

133:18308 Composition containing crosslinkable matrix precursor and poragen and porous matrix prepared therefrom. Bruza, Kenneth J.; Godschalx, James P.; Shaffer, Edward O., II; Smith, Dennis W., Jr.; Townsend, Paul H., III; Bouck, Kevin J.; Niu, Qing Shan J. (The Dow Chemical Company, USA). PCT Int. Appl. WO 2000031183 A1 **20000602**, 40 pp. DESIGNATED STATES: W: CN, IL, JP, KR, SG;

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US27674 19991122. PRIORITY: US 1998-PV109710 19981124.

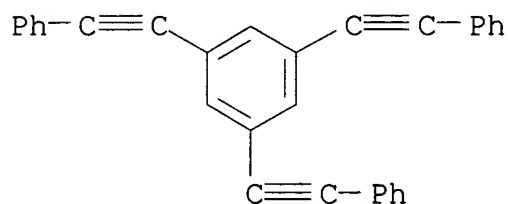
AB A suitable crosslinkable matrix precursor and a poragen can be treated to form a porous crosslinked matrix having a Tg of >300.degree.. The porous matrix material has a lower dielec. const. than the corresponding non-porous matrix material, making the porous matrix material particularly attractive for a variety of electronic applications including integrated circuits, multichip modules, and flat panel display devices. Thus polypropylene glycol reacted with cinnamoyl chloride to give polypropylene glycol biscinnamate which was polymd. thermally with divinylsiloxane bisbenzocyclobutene to give a porous article having pore size of 10-50 nm.

IT **118688-56-5DP**, 1,3,5-Tris(phenylethynyl)benzene, oligomers
204521-32-4P

(prepn. of compn. contg. crosslinkable matrix precursor and poragen and porous matrix)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



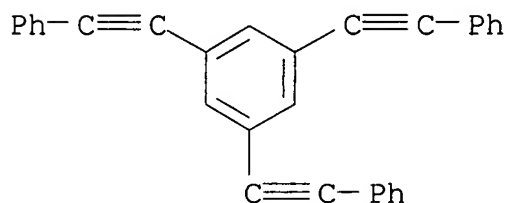
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

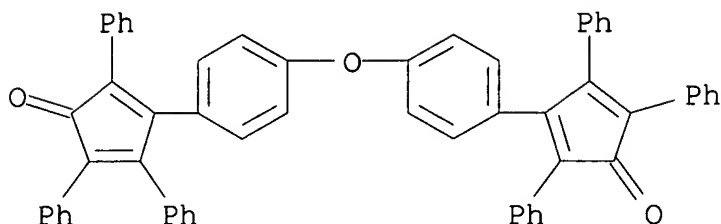
CRN 118688-56-5

CMF C30 H18



CM 2

CRN 13092-45-0
CMF C58 H38 O3



IT **118688-56-5DP**, 1,3,5-Tris(phenylethynyl)benzene, oligomers
204521-32-4P
(prep. of compn. contg. crosslinkable matrix precursor and
poragen and porous matrix)

L25 ANSWER 34 OF 50 ZCA COPYRIGHT 2006 ACS on STN

132:182151 Adhesion promoter and self-priming resin compositions and
articles made therefrom. Stokich, Theodore M., Jr.; Martin, Brian
B.; Strandjord, Andrew J.; Hetzner, Jack E.; Harris, Robert F.;
Townsend, Paul H., III; Frye, Donald C.; Schmidt, Donald L. (The Dow
Chemical Company, USA). PCT Int. Appl. WO 2000011096 A1
20000302, 27 pp. DESIGNATED STATES: W: CN, JP, KR, SG; RW:
AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,
SE. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US19242
19990823. PRIORITY: US 1998-138510 19980824.

AB A compn. is comprised of the following: (a) a hydrolyzed or
partially hydrolyzed silane selected from alkoxysilanes and
acyloxysilanes; (b) a solvent consisting of an org. liq. or mixt. of
two or more org. liqs. in which component (a) and component (c) are
sol. and (c) a crosslinking prepolymer, oligomer, resin or mixts.
thereof that forms a low dielec. const. crosslinked polyarylene. A
coating may be made using the compn. wherein the coating is
comprised of a crosslinked polymer of a low dielec. crosslinking
prepolymer, oligomer, resin or mixt. thereof and a hydrolyzed or
partially hydrolyzed silane, the coating being adhered to a surface
of a substrate wherein the surface is comprised of a first material
that is a metal, ceramic or polymer and a second material that is
(i) a metal, ceramic, or polymer and (ii) different than the first
material.

IT **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-
triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene
copolymer

(adhesion promoter and self-priming resin compns. and articles
made therefrom)

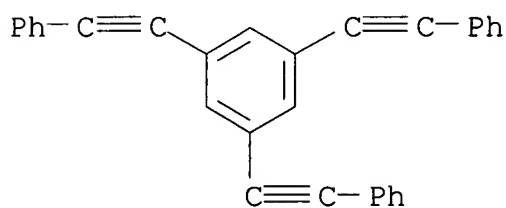
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

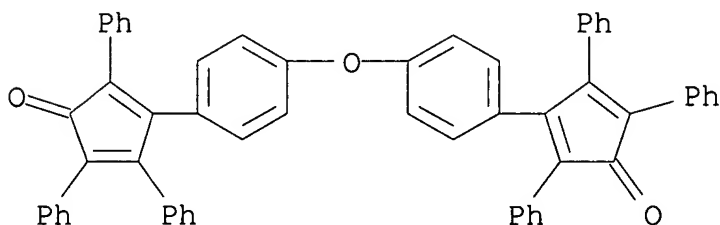
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3

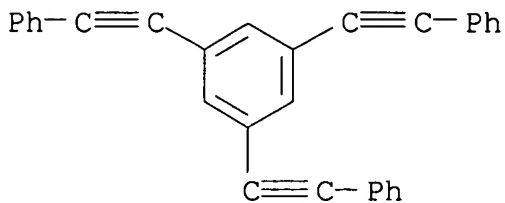


IT **118688-56-5P**

(monomer; adhesion promoter and self-priming resin compns. and articles made therefrom)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **204521-32-4P**, 3,3'-(Oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone)-1,3,5-tris(phenylethynyl)benzene

copolymer

(adhesion promoter and self-priming resin compns. and articles made therefrom)

IT **118688-56-5P**

(monomer; adhesion promoter and self-priming resin compns. and articles made therefrom)

L25 ANSWER 35 OF 50 ZCA COPYRIGHT 2006 ACS on STN

131:324544 Aromatic acetylenes as carbon precursors. Keller, Teddy M.; Jones, Kenneth M. (United States Dept. of the Navy, USA). U.S. US 5980853 A **19991109**, 6 pp., Division of U.S. Ser. No. 23,442, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1998-168066 19981008. PRIORITY: US 1993-23442 19930226.

AB Amorphous carbon is prepd. with high char (semicoke) yield and low porosity by pyrolysis of compds. of general structure C6R13R4R5R6 (R1 = C.tplbond.CPh; R2, R3, and R4 are independently unsubstituted or substituted alkyl, alkenyl, alkynyl, aryl, H, or C.tplbond.CPh) up to >450.degree.. Preferred arom. acetylenic precursors are: (1) 1,2,3-C6H3(C.tplbond.CPh)3, (2) 1,2,4-C6H3(C.tplbond.CPh)3, (3) 1,2,3,4-C6H2(C.tplbond.CPh)4, (4) 1,2,3,5-C6H2(C.tplbond.CPh)4, and (5) pentakis(phenylethynyl)benzene. Heating to 450-1000.degree. (preferably 700-950.degree.) followed by graphitization (at 1000.degree. to .apprx.3000.degree.) in a non-oxidizing or inert atm. resulted in a carbon sample with excellent high-temp. oxidative stability.

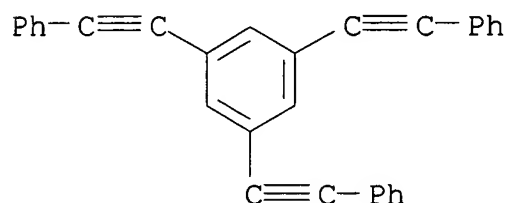
IT **118688-56-5P**, Benzene, 1,3,5-Tris(phenylethynyl)-

151041-82-6P, Benzene, 1,2,4-Tris(phenylethynyl)-

(synthesis, pyrolysis, and graphitization of arom. acetylenes as precursors for prepn. of amorphous carbon)

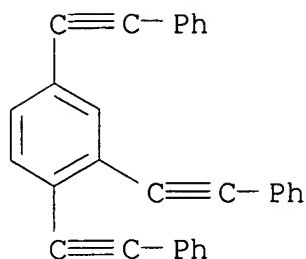
RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**, Benzene, 1,3,5-Tris(phenylethynyl)-
151041-82-6P, Benzene, 1,2,4-Tris(phenylethynyl)-
 (synthesis, pyrolysis, and graphitization of arom. acetylenes as
 precursors for prepn. of amorphous carbon)

L25 ANSWER 36 OF 50 ZCA COPYRIGHT 2006 ACS on STN

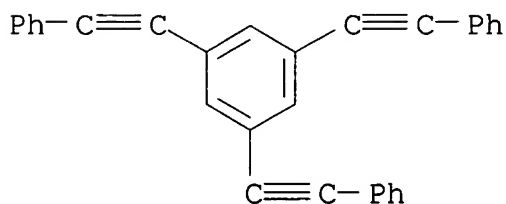
131:272357 Polyphenylene oligomers, uncured polymer or cured polymer,
 and polyfunctional compound for dielectrics. Godschalx, James P.;
 Romer, Duane R.; So, Ying Hung; Lysenko, Zenon; Mills, Michael E.;
 Buske, Gary R.; Townsend, Paul H., III; Smith, Dennis W., Jr.;
 Martin, Steven J.; Devries, Robert A. (The Dow Chemical Company,
 USA). U.S. US 5965679 A **19991012**, 25 pp., Cont.-in-part
 of U.S. Ser. No. 711,838, abandoned. (English). CODEN: USXXAM.
 APPLICATION: US 1997-834677 19970401. PRIORITY: US 1996-711838
 19960910.

AB An oligomer, uncured polymer or cured polymer comprises the reaction
 product of .gtoreq.1 polyfunctional compds. contg. .gtoreq.2
 cyclopentadienone groups and .gtoreq.1 polyfunctional compd. contg.
 .gtoreq.2 arom. acetylene groups where at least some of the
 polyfunctional compds. contain .gtoreq.3 reactive groups. Thus,
 3,3'-(oxydi-1,4-phenylene)bis(2,4,5-triphenylcyclopentadienone) 100,
 and 1,3,5-tris(phenylethynyl)benzene 48.3 g were heated 200.degree.
 in N-methylpyrrolidone for 8.5 h, spin-coated on a wafer, heated at
 325.degree. for 90 s, and cured at 450.degree. for 2 min. under N.

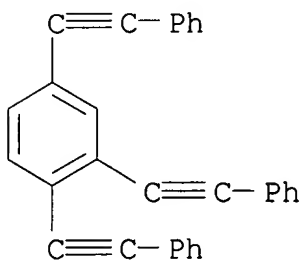
IT **118688-56-5P 151041-82-6P**
 (polyphenylene oligomers, uncured polymer or cured polymer for
 heat stable dielecs. for integrated circuit)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA
 CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



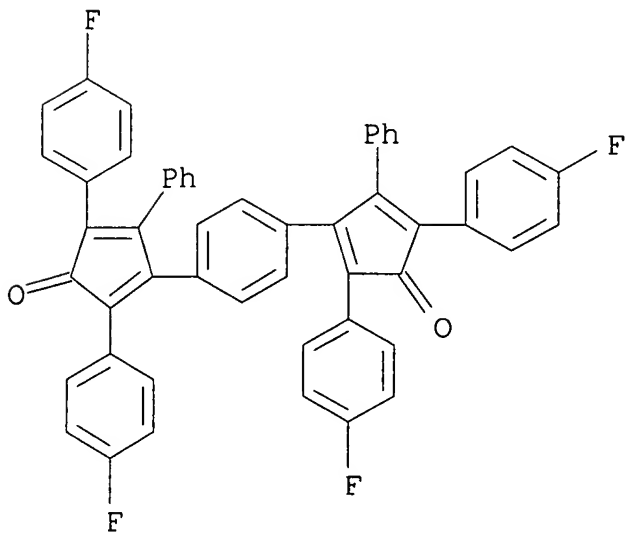
IT 204521-26-6P 204521-29-9P 204521-31-3P
 204521-32-4P

(polyphenylene oligomers, uncured polymer or cured polymer for
 heat stable dielects. for integrated circuit)

RN 204521-26-6 ZCA
 CN 1,4-Cyclopentadien-1-one, 3,3'-(1,4-phenylene)bis[2,5-bis(4-
 fluorophenyl)-4-phenyl-, polymer with 1,3-bis(phenylethynyl)benzene
 and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

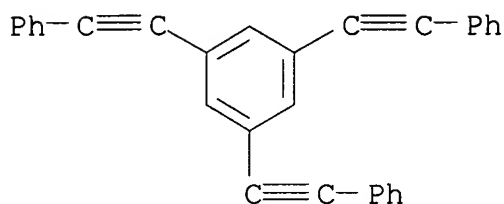
CM 1

CRN 204521-23-3
 CMF C52 H30 F4 O2



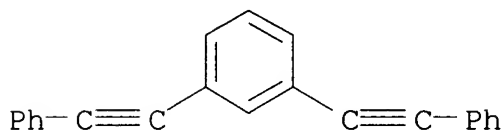
CM 2

CRN 118688-56-5
CMF C30 H18



CM 3

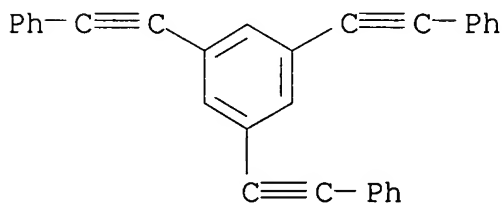
CRN 13141-36-1
CMF C22 H14



RN 204521-29-9 ZCA
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-oxybis[4-(phenylethynyl)benzene] and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

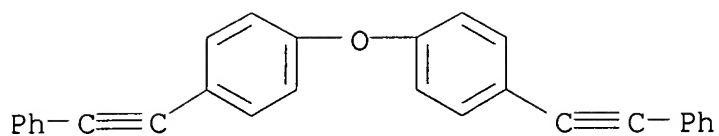
CM 1

CRN 118688-56-5
CMF C30 H18



CM 2

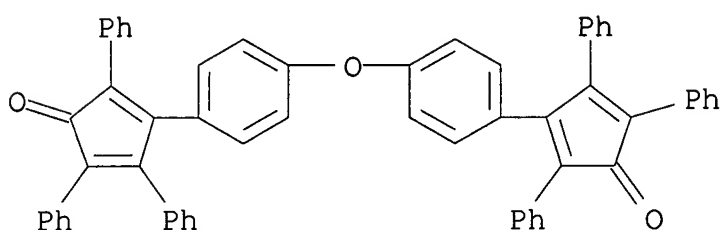
CRN 59745-29-8
CMF C28 H18 O



CM 3

CRN 13092-45-0

CMF C58 H38 O3



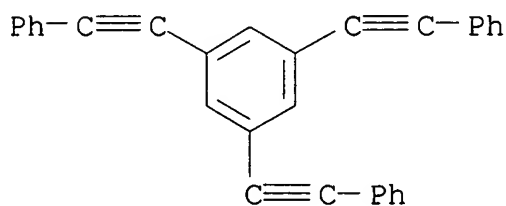
RN 204521-31-3 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

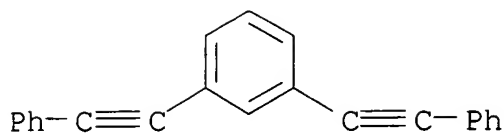
CMF C30 H18



CM 2

CRN 13141-36-1

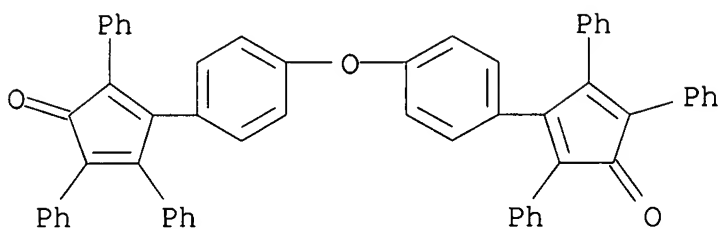
CMF C22 H14



CM 3

CRN 13092-45-0

CMF C58 H38 O3



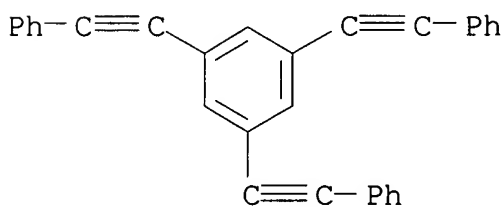
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

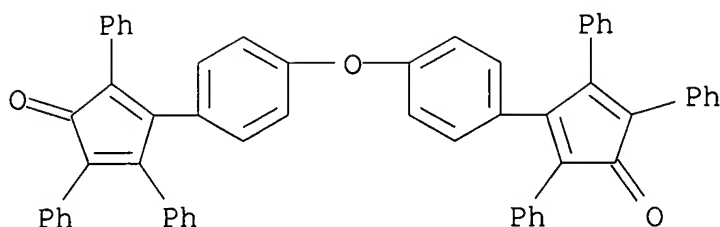
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3



IT **118688-56-5P 151041-82-6P**

(polyphenylene oligomers, uncured polymer or cured polymer for heat stable dielects. for integrated circuit)

IT **204521-26-6P 204521-29-9P 204521-31-3P
204521-32-4P**

(polyphenylene oligomers, uncured polymer or cured polymer for heat stable dielects. for integrated circuit)

L25 ANSWER 37 OF 50 ZCA COPYRIGHT 2006 ACS on STN

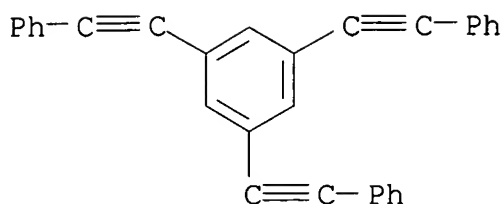
131:235322 Localized optical excitations and two-exciton spectroscopy of phenylacetylene dendrimers. Chernyak, V.; Poliakov, E. Y.; Tretiak, S.; Mukamel, S. (Department of Chemistry, University of Rochester, Rochester, NY, 14627, USA). Materials Research Society Symposium Proceedings, 543(Dynamics in Small Confining Systems IV), 327-338 (English) **1999**. CODEN: MRSPDH. ISSN: 0272-9172. Publisher: Materials Research Society.

AB The 1- and 2-exciton manifolds of conjugated dendrimers possessing fractal geometries are studied using the Frenkel exciton model. Two-photon spectra can be used to det. both the magnitude and the sign of short-range coupling among segments. Self-similarity and the high degree of symmetry make it possible to compute the 1-exciton states and the optical response with reduced numerical effort that scales linearly rather than exponentially with the no. of generations. The 3rd-order optical response and exciton scattering matrix are expressed in compact forms using irreducible representation of optical excitations, totally avoiding the expensive explicit calcn. of 2-exciton eigenstates.

IT **118688-56-5**, Benzene, 1,3,5-tris(phenylethynyl)-
(localized optical excitations and two-exciton spectra of)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**, Benzene, 1,3,5-tris(phenylethynyl)-
(localized optical excitations and two-exciton spectra of)

L25 ANSWER 38 OF 50 ZCA COPYRIGHT 2006 ACS on STN

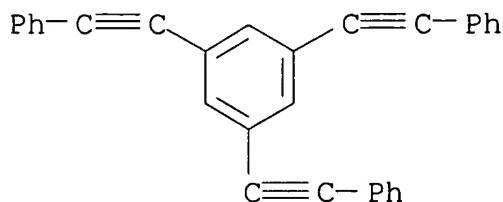
131:51179 Coupled exciton model with off-diagonal disorder for optical excitations in extended dendrimers. Harigaya, Kikuo (Physical Science Division, Electrotechnical Laboratory, Tsukuba, Japan). Physical Chemistry Chemical Physics, 1(7), 1687-1689 (English) **1999**. CODEN: PPCPFQ. ISSN: 1463-9076. Publisher: Royal Society of Chemistry.

AB A phenomenol. coupled exciton model is proposed to characterize optical excitations in extended dendrimers. An onsite exciton state is assigned at each Ph ring and a nearest neighbor hopping integral which obeys the Gaussian distribution is considered between the exciton states. The decreasing optical excitation energy with respect to the dendrimer size indicates the presence of exciton funnels along the backbone of the dendrimers. Therefore, the extended dendrimers can work as artificial fractal antenna systems which capture energy of light.

IT **118688-56-5 161127-06-6**
(coupled exciton model with off-diagonal disorder for optical excitations in extended dendrimers of diphenylacetylene)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)

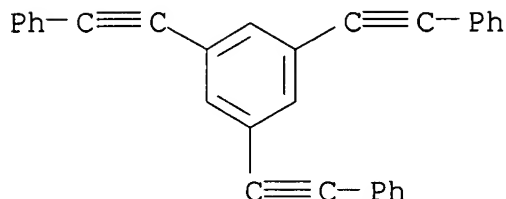


RN 161127-06-6 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5
CMF C30 H18



IT **118688-56-5 161127-06-6**

(coupled exciton model with off-diagonal disorder for optical excitations in extended dendrimers of diphenylacetylene)

L25 ANSWER 39 OF 50 ZCA COPYRIGHT 2006 ACS on STN

130:251951 Optical excitations in fractal antenna supermolecules with conjugated electrons: extended dendrimers. Harigaya, Kikuo (Physical Science Division, Electrotechnical Laboratory, Tsukuba, 305-8568, Japan). Chemical Physics Letters, 300(1,2), 33-36 (English) **1999**. CODEN: CHPLBC. ISSN: 0009-2614. Publisher: Elsevier Science B.V..

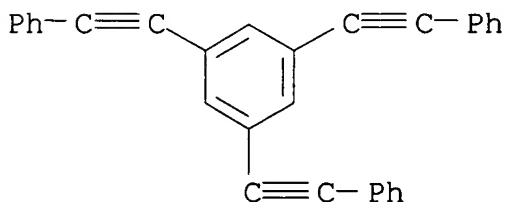
AB A coupled dipole model is proposed in order to characterize optical excitations in dendrimer supermols.: the extended dendrimers. The dendrimer is composed of phenyl-ring vertexes and legs with Ph rings and acetylene units. A transition dipole moment is assigned at each Ph ring and the nearest-neighbor hopping integral is considered between the neighboring dipoles. The decreasing optical excitation energy with respect to the dendrimer size indicates the presence of exciton pathways along the backbone of the dendrimers.

IT **118688-56-5**

(optical excitations in fractal antenna supermols. with conjugated electrons)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**

(optical excitations in fractal antenna supermols. with conjugated electrons)

L25 ANSWER 40 OF 50 ZCA COPYRIGHT 2006 ACS on STN

130:202768 Dendrimeric antenna supermolecules with multistep directed energy transfer. Swallen, Stephen F.; Shortreed, Michael R.; Shi, Zhong-You; Tan, Weihong; Xu, Zhifu; Devadoss, Chelladuri; Moore, Jeffrey S.; Kopelman, Raoul (Department of Chemistry, University of Michigan, Ann Arbor, MI, 48109-1055, USA). Science and Technology of Polymers and Advanced Materials: Emerging Technologies and Business Opportunities, [Proceedings of the International Conference on Frontiers of Polymers and Advanced Materials], 4th, Cairo, Jan. 4-9, 1997, Meeting Date 1997, 521-533. Editor(s): Prasad, Paras N. Plenum: New York, N. Y. (English) **1998**. CODEN: 67CCA5.

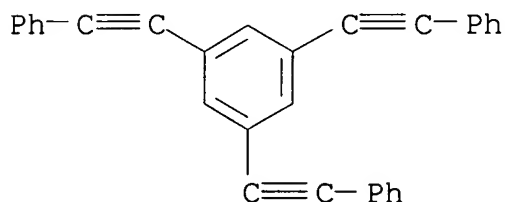
AB The photoinduced energy transfer in large mols. was studied in purely hydrocarbon dendrimers based on di-Ph acetylene and perylene-substituted di-Ph acetylene, resp. Electronic absorption and excitation spectra of these dendrimers with sizes varying from 4-127 Ph units in the moiety (.ltoreq.125 .ANG.) were taken to investigate energy funnel mechanisms and photostability. The largest perylene-substituted dendrimer (39 Ph units, termed nanostar) presented excellent energy funneling characteristics. This specially designed dendrimer exhibited rapid, well-directed, multistep intramol. exciton transfer. In addn., these species were very photostable, with an extremely large absorption coeff. This new class of designer mols. are tailor-made as single mol. light and exciton sources. They could be applied as supertips for optical nanoprobe and nanosensors, as exciton sources for near-field and scanning exciton microscopy, and as material for org. LEDs or sensitization of photovoltaics.

IT **118688-56-5 161127-06-6**

(photoinduced energy transfer in hydrocarbon dendrimeric supermols. based on diphenylacetylene and perylene-substituted diphenylacetylene)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)

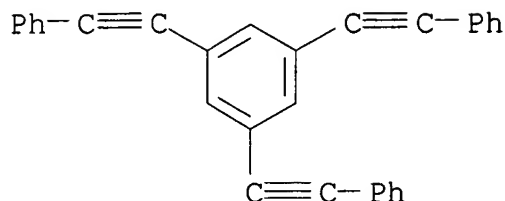


RN 161127-06-6 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5
CMF C30 H18



IT **118688-56-5 161127-06-6**

(photoinduced energy transfer in hydrocarbon dendrimeric supermols. based on diphenylacetylene and perylene-substituted diphenylacetylene)

L25 ANSWER 41 OF 50 ZCA COPYRIGHT 2006 ACS on STN

129:290672 Phenylquinoxaline Polymers and Low Molar Mass Glasses as Electron-Transport Materials in Organic Light-Emitting Diodes. Jandke, Markus; Stroehriegl, Peter; Berleb, Stefan; Werner, Ekkehard; Bruetting, Wolfgang (Makromolekulare Chemie I and Bayreuther Institu, Universitaet Bayreuth, Bayreuth, 95440, Germany). *Macromolecules*, 31(19), 6434-6443 (English) **1998**. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

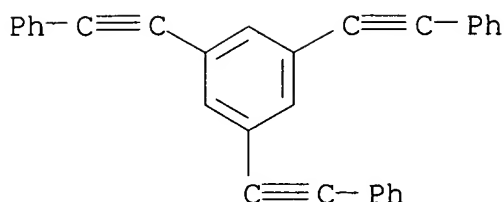
AB A new synthetic approach to both phenylquinoxaline polymers and low molar mass glasses is developed. A palladium-catalyzed coupling of arylalkynes and bromobenzenes and subsequent oxidn. of the triple bonds leads to the corresponding benziles. Reaction with diaminobenzidine yields poly(phenylquinoxalines) (PPQs), whereas the reaction with 1,2-diaminobenzenes leads to low molar mass bis(phenylquinoxalines) (BPQs) and tris(phenylquinoxalines) (TPQs). Both PPQs and TPQs carry tert-Bu or CF₃ substituents and are fully sol. in chlorinated hydrocarbons. The starburst TPQs are able to form stable, low molar mass glasses. Cyclic voltammetry reveals that the TPQs have low-lying lowest unoccupied MOs levels at about -3.6 eV and are attractive as electron-transport materials in org. light-emitting diodes (LEDs). Two-layer LEDs with poly(phenylenevinylene) were fabricated that show a max. brightness of 450 cd/m².

IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene

(intermediate; in synthesis of phenylquinoxaline low molar mass glasses as electron-transport materials in org. light-emitting diodes)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
(intermediate; in synthesis of phenylquinoxaline low molar mass
glasses as electron-transport materials in org. light-emitting
diodes)

L25 ANSWER 42 OF 50 ZCA COPYRIGHT 2006 ACS on STN

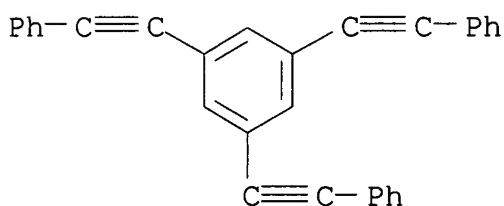
129:189067 Synthesis and x-ray structure of 1,3,5-
tris(phenylethynyl)benzene. Bochkarev, Mikhail N.; Katkova, Marina
A.; Fedorova, Elena A.; Makarenko, Natalya P.; Schumann, Herbert;
Girgsdies, Frank (G. A. Razuvaev Institute Organometallic Chemistry,
Nizhniy Novgorod, 603600, Russia). Zeitschrift fuer Naturforschung,
B: Chemical Sciences, 53(8), 833-835 (English) **1998**.
CODEN: ZNBSEN. ISSN: 0932-0776. Publisher: Verlag der Zeitschrift
fuer Naturforschung.

AB 1,3,5-(PhC.tplbond.C)3C6H3, obtained by coupling 1,3,5-I3C6H3 with
PhC.tplbond.CH, shows an unusual non-planar mol. structure.

IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
(crystal structure)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



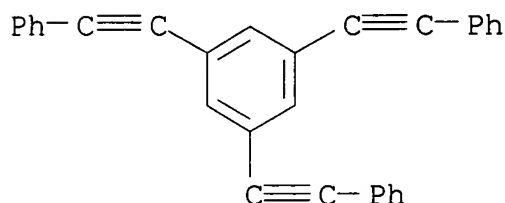
IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
(crystal structure)

L25 ANSWER 43 OF 50 ZCA COPYRIGHT 2006 ACS on STN

128:321249 Localized electronic excitations in phenylacetylene
dendrimers. Tretiak, Sergei; Chernyak, Vladimir; Mukamel, Shaul
(Department of Chemistry, University of Rochester, Rochester, NY,
14627-0216, USA). Journal of Physical Chemistry B, 102(18),
3310-3315 (English) **1998**. CODEN: JPCBFK. ISSN:
1089-5647. Publisher: American Chemical Society.

AB Electron-hole pairs created upon optical excitation of conjugated dendrimers (fractal antenna macromols.) are localized within segments connected by benzene rings substituted at the meta-position. The absorption spectra of 2 families of dendrimers are analyzed using collective electronic normal modes representing the changes in charge and bond-order distributions induced by the optical field. The present approach may be used in the design of artificial light-harvesting antennae with controlled energy-funneling pathways.

IT **118688-56-5**, 1,3,5-Tris(phenylethynyl)benzene
(localized electronic excitations in phenylacetylene dendrimers)
RN 118688-56-5 ZCA
CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**, 1,3,5-Tris(phenylethynyl)benzene
(localized electronic excitations in phenylacetylene dendrimers)

L25 ANSWER 44 OF 50 ZCA COPYRIGHT 2006 ACS on STN
128:230849 Polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compounds, and integrated circuit articles using dielectrics therefrom. Godschalx, James P.; Romer, Duane R.; So, Ying Hung; Lysenko, Zenon; Mills, Michael E.; Buske, Gary R.; Townsend, Paul H., III; Smith, Dennis W., Jr.; Martin, Steven J.; Devries, Robert A. (Dow Chemical Co., USA). PCT Int. Appl. WO 9811149 A1 **19980319**, 52 pp. DESIGNATED STATES: W: IL, JP, KR, NO, SG; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1997-US15142 19970828. PRIORITY: US 1996-711838 19960910; US 1997-834677 19970401.

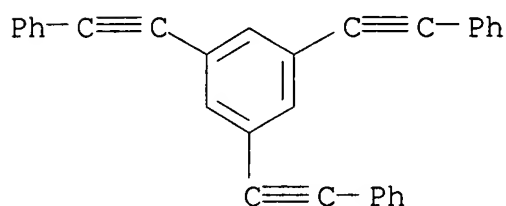
AB An oligomer, uncured polymer or cured polymer comprising the reaction product of one or more polyfunctional compds. contg. two or more cyclopentadienone groups and at least one polyfunctional compd. contg. two or more arom. acetylene groups wherein at least some of the polyfunctional compds. contain three or more reactive groups. 3,3'-1,4-Phenylenebis[2,5-bis(4-fluorophenyl)-4-phenylcyclopentadienone] 316, 1,3-bis(phenylethynyl)benzene 72, and 1,3,5-tris(phenylethynyl)benzene 44 mg were heated under reflux in 1,3-diisopropylbenzene for 42 h, spin-coated on a wafer, and cured at 400.degree. for 1 h.

IT **118688-56-5P 151041-82-6P**

(polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compds., and integrated circuit articles using dielecs. therefrom)

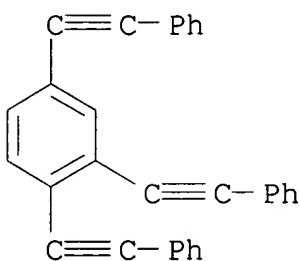
RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **204521-26-6P 204521-29-9P 204521-31-3P**
204521-32-4P

(polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compds., and integrated circuit articles using dielecs. therefrom)

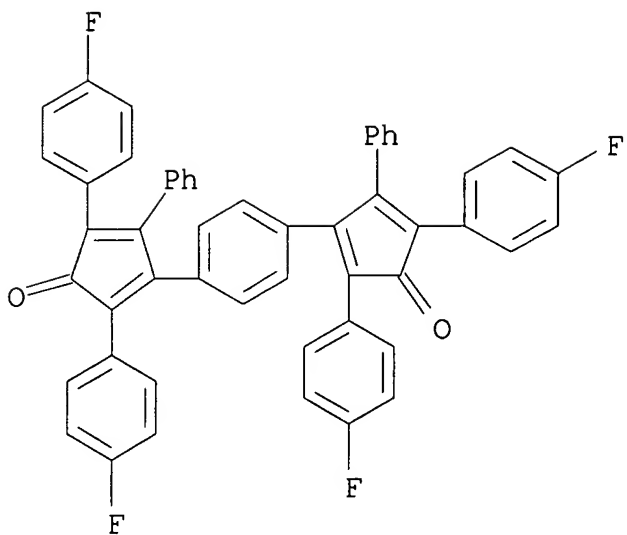
RN 204521-26-6 ZCA

CN 1,4-Cyclopentadien-1-one, 3,3'-(1,4-phenylene)bis[2,5-bis(4-fluorophenyl)-4-phenyl-, polymer with 1,3-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

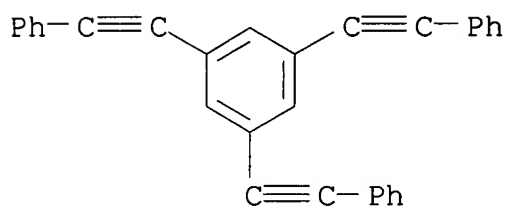
CRN 204521-23-3

CMF C52 H30 F4 O2



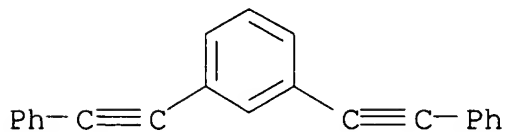
CM 2

CRN 118688-56-5
CMF C30 H18



CM 3

CRN 13141-36-1
CMF C22 H14



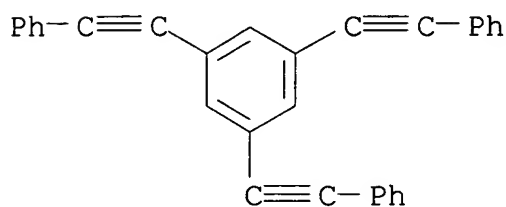
RN 204521-29-9 ZCA
CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,1'-oxybis[4-(phenylethynyl)benzene] and

1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

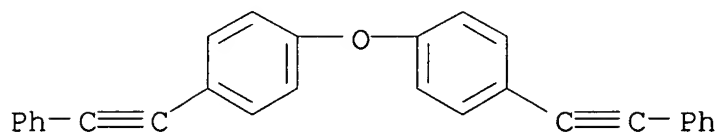
CMF C30 H18



CM 2

CRN 59745-29-8

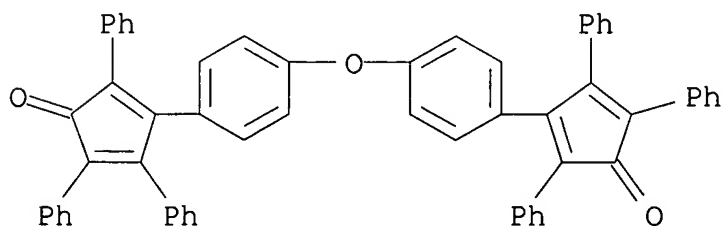
CMF C28 H18 O



CM 3

CRN 13092-45-0

CMF C58 H38 O3



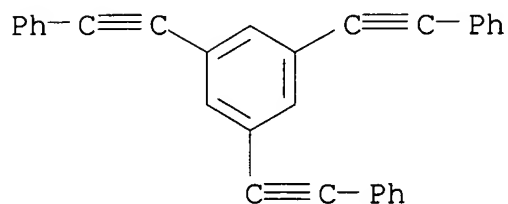
RN 204521-31-3 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3-bis(phenylethynyl)benzene and 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

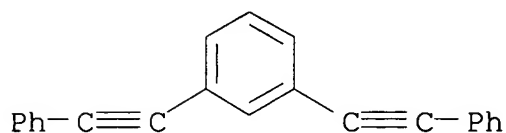
CMF C30 H18



CM 2

CRN 13141-36-1

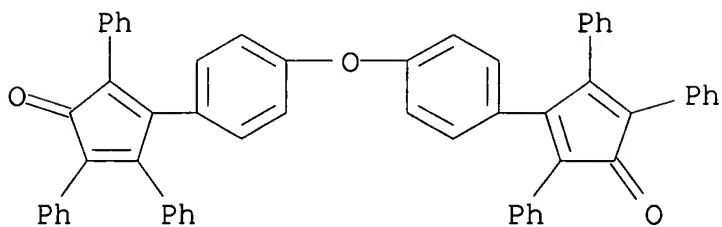
CMF C22 H14



CM 3

CRN 13092-45-0

CMF C58 H38 O3



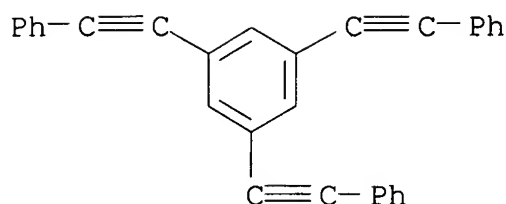
RN 204521-32-4 ZCA

CN 2,4-Cyclopentadien-1-one, 3,3'-(oxydi-4,1-phenylene)bis[2,4,5-triphenyl-, polymer with 1,3,5-tris(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

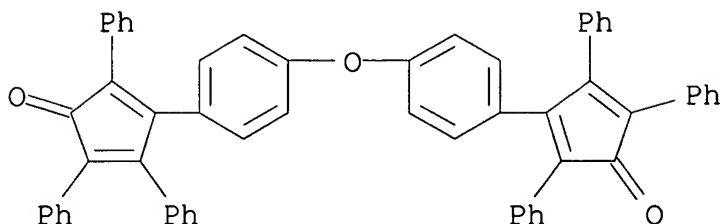
CMF C30 H18



CM 2

CRN 13092-45-0

CMF C58 H38 O3

IT **118688-56-5P 151041-82-6P**

(polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compds., and integrated circuit articles using dielects. therefrom)

IT **204521-26-6P 204521-29-9P 204521-31-3P 204521-32-4P**

(polyphenylene oligomers, uncured polymers, and cured polymers, polyfunctional compds., and integrated circuit articles using dielects. therefrom)

L25 ANSWER 45 OF 50 ZCA COPYRIGHT 2006 ACS on STN

126:309885 Spectroscopic evidence for excitonic localization in fractal antenna supermolecules. Kopelman, Raoul; Shortreed, Michael; Shi, Zhong-You; Tan, Weihong; Xu, Zhifu; Moore, Jeffrey S.; Bar-Haim, Arie; Klafter, Joseph (Dep. Chem., Univ. Michigan, Ann Arbor, MI, 48109-1055, USA). Physical Review Letters, 78(7), 1239-1242 (English) **1997**. CODEN: PRLTAO. ISSN: 0031-9007. Publisher: American Physical Society.

AB Direct exptl. evidence is presented for the existence of localized excitations on fractal supermol. structures that may serve as photonic antenna systems. For 1 dendrimer family the electronic spectra show no red shift with system size, indicating that the excitations are localized at the nodes of the Cayley trees describing these ordered structures. But similar dendrimers with

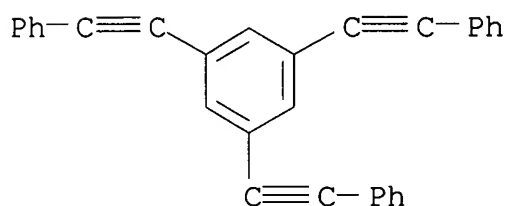
varying lengths of the mol. branches exhibit a decrease in the band edge energy with a growing size of the system, consistent with a hierarchy of localization lengths. The latter corresponds to an energy funnel property of these ordered nanostructures.

IT **118688-56-5**

(spectroscopic evidence for excitonic localization in fractal antenna supermols.)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5**

(spectroscopic evidence for excitonic localization in fractal antenna supermols.)

L25 ANSWER 46 OF 50 ZCA COPYRIGHT 2006 ACS on STN

122:291606 Cure kinetics of a multisubstituted acetylenic monomer.

Sastri, S. B.; Armistead, J. P.; Keller, T. M. (Materials Chemistry Branch, Naval Research Laboratory, Washington, DC, 20375-5320, USA). Polymer, 36(7), 1449-54 (English) **1995**. CODEN: POLMAG.

ISSN: 0032-3861. Publisher: Elsevier.

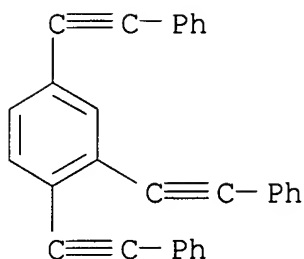
AB A polyfunctional arylacetylenic monomer, 1,2,4-tris(phenylethynyl)benzene, thermally polymerizes by a free-radical mechanism to a highly crosslinked structure of interest as a precursor matrix for carbon/carbon composites. The polymn. reaction was characterized by Fourier transform infra-red spectroscopy and DSC. The disappearance of the acetylenic stretching band at 2212 cm⁻¹ was used successfully to monitor the cure reaction. The cure reaction follows first-order kinetics with an overall activation energy of 135 kJ mol⁻¹. Dynamic DSC anal. carried out to est. the activation energy of the cure reaction yields a value of 137 kJ mol⁻¹.

IT **151041-82-6**

(kinetics of polymn. of tris(phenylethynyl)benzene)

RN 151041-82-6 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **151041-82-6**

(kinetics of polymn. of tris(phenylethynyl)benzene)

L25 ANSWER 47 OF 50 ZCA COPYRIGHT 2006 ACS on STN

122:146428 The third-order optical nonlinearity of the phenylethynyl-substituted benzene system. Kondo, Koichi; Yasuda, Sayo; Sakaguchi, Tohoru; Miya, Masaru (Faculty Science Technology, Ritsumeikan University, Shiga, 525, Japan). Journal of the Chemical Society, Chemical Communications (1), 55-6 (English) **1995**. CODEN: JCCCAT. ISSN: 0022-4936. Publisher: Royal Society of Chemistry.

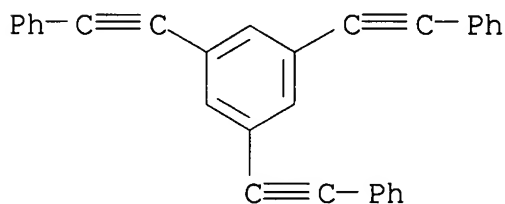
AB Phenylethynyl substituted benzenes (1,3,5-tri-, 1,2,4,5-tetra-, and hexa-) were synthesized by the Pd-coupling reaction of phenylacetylene with the corresponding bromobenzene. The 3rd-order optical nonlinearity $[X(3)(\omega)]$ increases with the participation of π -conjugation through the triple bond as detd. by the degenerate 4-wave mixing method in a CHCl_3 soln.

IT **118688-56-5P**

(prepn. and UV spectra and third-order optical nonlinearity of)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**

(prepn. and UV spectra and third-order optical nonlinearity of)

L25 ANSWER 48 OF 50 ZCA COPYRIGHT 2006 ACS on STN

122:134003 Synthesis and characterization of multiple phenylethynylbenzenes via cross-coupling with activated palladium catalyst. Jones, Kenneth M.; Keller, Teddy M. (Naval Res. Lab.,

Materials Chemistry Branch, Washington, DC, 20375-5320, USA).
Polymer, 36(1), 187-92 (English) **1995**. CODEN: POLMAG.
ISSN: 0032-3861. Publisher: Elsevier.

AB Several compds. contg. multiple phenylethynyl substituents were
prepd. and polymd. to thermosets through the acetylenic units.
Pyrolysis of the polymers afforded high carbon yields. The
acetylenic-based compds. were synthesized from the
palladium-catalyzed coupling reaction of phenylacetylene with
multiple-brominated benzenes. Inconsistencies were obsd. in the
reaction yields with time, which were attributed to poisoning of the
palladium. A procedure was developed for the activation of
palladium using magnesium. The activated palladium gave consistent
yield of cross-coupled products.

IT **161127-06-6DP**, pyrolyzed **161127-07-7DP**, pyrolyzed
(prepn. and characterization of)

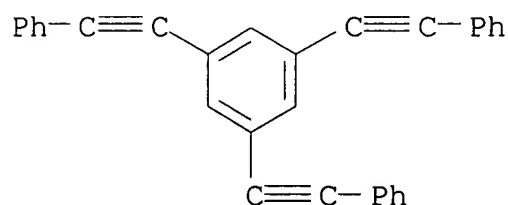
RN 161127-06-6 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)-, homopolymer (9CI) (CA INDEX
NAME)

CM 1

CRN 118688-56-5

CMF C30 H18



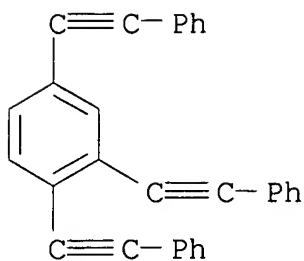
RN 161127-07-7 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)-, homopolymer (9CI) (CA INDEX
NAME)

CM 1

CRN 151041-82-6

CMF C30 H18

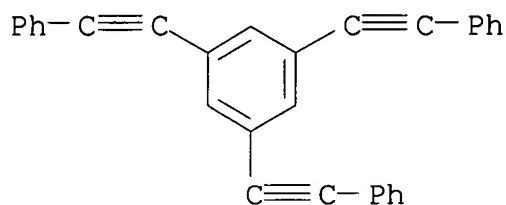


IT **118688-56-5P 151041-82-6P**

(prepn. and polymn. of)

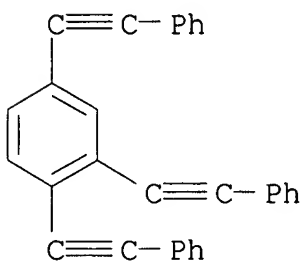
RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **161127-07-7**

(prepn. and pyrolysis of)

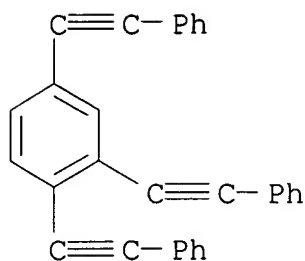
RN 161127-07-7 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 151041-82-6

CMF C30 H18



IT **161127-06-6P**

(prepn. and pyrolysis of)

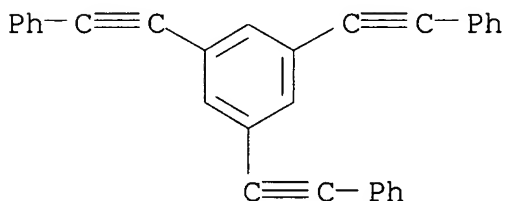
RN 161127-06-6 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 118688-56-5

CMF C30 H18



IT **161127-06-6DP**, pyrolyzed **161127-07-7DP**, pyrolyzed
(prepn. and characterization of)

IT **118688-56-5P 151041-82-6P**
(prepn. and polymn. of)

IT **161127-07-7**
(prepn. and pyrolysis of)

IT **161127-06-6P**
(prepn. and pyrolysis of)

L25 ANSWER 49 OF 50 ZCA COPYRIGHT 2006 ACS on STN

119:226612 Studies on cure chemistry of new acetylenic resins. Sastri, Satya B.; Keller, Teddy M.; Jones, Kenneth M.; Armistead, James P. (Mater. Chem. Branch, Nav. Res. Lab., Washington, DC, 20375, USA). Macromolecules, 26(23), 6171-4 (English) **1993**. CODEN: MAMOBX. ISSN: 0024-9297.

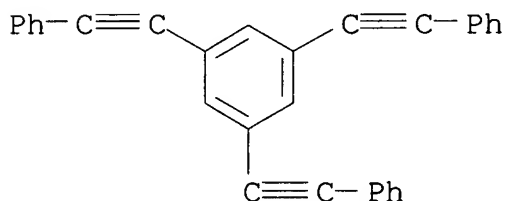
AB This paper describes cure studies of arylacetylene-terminated resins to gain some fundamental understanding of the influence of various structural aspects of a mol. on its cure chem. Of particular interest are the effects of the no. of acetylenic substituents on

the arom. ring and their relative positions to one another. A series of arylacetylenic monomers was used as model compds. Activation energy (E) of the cure reaction as calcd. from dynamic DSC anal. reveals that there is a direct correlation between the activation energy and the stability of radicals formed by thermal initiation. Based on model compd. studies, it is evident that the resonance stabilization of radicals contributes significantly to the lowering of activation energy values. When the no. of substituents on the arom. ring varies, the combined influence of resonance, inductive, proximity, and steric factors needs to be considered. Studies with blends of acetylenic monomers suggest that the possible chain-initiating species are those radicals which can be stabilized by resonance. From the DSC data, the authors also infer that the radicals formed initially may not be very selective in the reaction with other multiple bonds in their vicinity.

IT **118688-56-5 151041-82-6**
(polymn. of, kinetics and mechanism of, as model for curing ethynyl group-terminated resins)

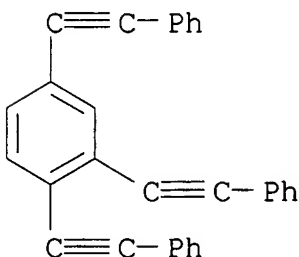
RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



RN 151041-82-6 ZCA

CN Benzene, 1,2,4-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5 151041-82-6**
(polymn. of, kinetics and mechanism of, as model for curing ethynyl group-terminated resins)

L25 ANSWER 50 OF 50 ZCA COPYRIGHT 2006 ACS on STN

110:74925 New trigonal lattice hosts: stoichiometric crystal inclusions

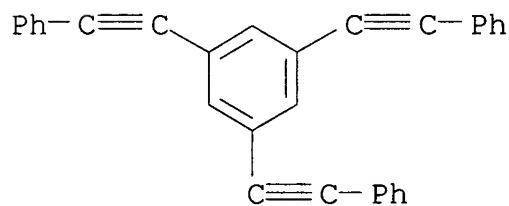
of laterally trisubstituted benzenes; x-ray crystal structure of 1,3,5-tris(4-carboxyphenyl)benzene-dimethylformamide. Weber, Edwin; Hecker, Manfred; Koepp, Erich; Orlia, Wolfgang; Czugler, Matyas; Csoregh, Ingeborg (Inst. Org. Chem. Biochem., Univ. Bonn, Bonn, D-5300/1, Fed. Rep. Ger.). Journal of the Chemical Society, Perkin Transactions 2: Physical Organic Chemistry (1972-1999) (7), 1251-7 (English) **1988**. CODEN: JCPKBH. ISSN: 0300-9580. OTHER SOURCES: CASREACT 110:74925.

AB New host mols. with a central 1,3,5-trisubstituted benzene ring and rigidly attached lateral arms composed of aryl or arylethynyl and extra functional groups are reported. They give >30 clathrates with org. solvents comprising alicyclic, arom., heterocyclic, dipolar aprotic, and protic mols. Inclusion selectivities and stoichiometries of the different clathrates are discussed. X-ray anal. of the title inclusion complex showed that the host mol. adopts a propeller conformation with perfect three-fold symmetry and acts as a donor in H bonds to 3 DMF mols. In the crystal structure the host-guest units are arranged stack-wise.

IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
(prepn. of)

RN 118688-56-5 ZCA

CN Benzene, 1,3,5-tris(phenylethynyl)- (9CI) (CA INDEX NAME)



IT **118688-56-5P**, 1,3,5-Tris(phenylethynyl)benzene
(prepn. of)